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I N S E C T P E S T S U R V E Y B U L L E T I N

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THE MORE IMPORTANT RECORDS FOR MAY

During the last week in the month grasshopper hatching was generally under way on the Great Plains and in the upper Mississippi Valley. In the East Central States hatching had begun but was decidedly retarded by cool wet weather. In general, these insects are numerous enough to cause considerable trouble this year.

Mormon crickets in many places are migrating from the egg beds and are reported as decidedly more abundant than last year over the greater part of the infested territory from South Dakota, to Idaho and Utah.

Damage by wireworms is recorded over a wide territory from Connecticut to the Carolinas and westward to California. The outbreaks, however, are scattered.

The curculio Naupactus leucoloma Boh., which was discovered for the first time in the United States in Okaloosa County, Fla., last year, is again active. The insect is attacking a wide variety of crops, including velvetbeans, peanuts, corn, and cotton. In some fields three-fourths of the corn plants have been destroyed.

May beetles began to emerge during the latter half of the month. Heavy flights were recorded in the South Atlantic States and in Kentucky, with instances of complete defoliation. The white grubs were reported as doing considerable damage to pastures in parts of Minnesota.

Cutworms are generally abundant and destructive. Considerable damage in the East Central States was caused by climbing cutworms.

A heavy armyworm outbreak is under way in the Mississippi Valley. The earliest reports were received from Mississippi and Arkansas, and later in the month reports of damage were received from as far north as Illinois,

and westward through Oklahoma to Texas. Over 20,000 acres of oats were lost in one county in southeastern Arkansas. Reports of damage by this insect have also been received from eastern Virginia and the Eastern Shore of Maryland.

General and heavy infestations of the corn ear worm are reported from Florida and Georgia, and around the Gulf to Louisiana. In Los Angeles County, Calif., rather heavy infestations have been reported on sweet corn.

The chinch bug has been slow in leaving winter quarters in the East Central States. About the middle of the month localized but somewhat severe infestations were reported from South Carolina and Mississippi.

The pea aphid is decidedly abundant and destructive over a wide area attacking both alfalfa and peas. Reports of heavy infestation of alfalfa have been received from Virginia, Kansas, Utah, and the Pacific Northwest, while damaging populations on peas were recorded from southeastern Virginia, Delaware, and Maryland and parts of Ohio and Utah. The insect is thus far comparatively scarce in Wisconsin.

The clover leaf weevil has been unusually abundant in the East Central States and westward to eastern Kansas and Iowa.

During the month the vetch bruchid was reported from four additional counties in North Carolina.

Spring-brood emergence of the codling moth was about complete the third week in May in Georgia. In west-central Virginia the first moths were taken by the middle of the month, first moths appeared in Delaware on May 6, in Pennsylvania on May 19, and up to May 24 no moths had yet appeared in the upper part of New York State. In the Mississippi Valley the peak of emergence was reached during the last week in the month in Missouri and southern Illinois. The first adults were observed in southern Ohio on May 17. Over a large part of the area the infestations are from moderate to high.

Although in general the eastern tent caterpillar appears to be less abundant than it was last year, populations are heavy throughout New England and the Middle Atlantic States, in some places being even greater than last year.

Fruit aphids, in general, are decidedly less troublesome than usual.

The plum curculio infestation in the Georgia fruit belt is said to be the lightest in 18 years. No heavy infestations by this insect have yet been reported from any of the States.

The seed corn maggot was very abundant in the lower Mississippi Valley, from Kentucky and Missouri westward to Nebraska and Oklahoma. Reports have been received of severe damage to peas in Washington State and to beans in the vicinity of Washington, D. C.

Survival of the Mexican bean beetle in hibernation cages in Columbus, Ohio, was the heaviest for several years. The insect started appearing early in the month in Virginia, Georgia, and Alabama, and late in the month was quite prevalent at least as far north as Maryland.

The beet leafhopper populations are rather large both in southern Idaho and in Utah.

The boll weevil is appearing in larger numbers than at any time during the last 3 years in parts of South Carolina, whereas in Georgia the brood seems to be the smallest in many years, as is also the case in the Delta section of Mississippi and in Louisiana. Emergence in Texas was very high, having been exceeded only three times in the past 12 years.

There was a heavy emergence of the pink bollworm in the Big Bend of Texas during the last week in April, indicating higher survival than last year.

Periodical cicada appeared during the last 2 weeks of the month throughout its known habitat.

A heavy outbreak of cankerworms appeared in northeastern Missouri. By the end of May they were stripping elms and other trees. Reports of similar, though less severe, damage were received from New England, New York, Ohio, Indiana, and Oklahoma.

Dog ticks are apparently more abundant than usual throughout the Middle Atlantic and East Central States.

G E N E R A L F E E D E R S

GRASSHOPPERS (Acrididae)

Illinois. W. P. Flint (May 24): Grasshopper eggs have been hatching in central Illinois for the past 2 weeks. The hatch has been slow, except on the sand areas. Probably not more than 2 percent of the eggs have hatched.

Wisconsin. E. L. Chambers (May): A few were just beginning to hatch on the lighter soils in Green County. Cold, cloudy weather is holding them back.

Iowa. C. J. Drake (May 19): Grasshoppers are hatching throughout most of the infested areas in the State. County agents in the western part of the State and in sandy areas along the Mississippi River are reporting very heavy hatching. Baiting has started on Muscatine Island, but not much bait will be broadcast before the first week of June.

Missouri. L. Haseman (May 26): Moderate-to-heavy hatching of grasshoppers has been reported the last 10 days, particularly on sunny slopes, all the way from Arkansas to the Iowa line. Some counties are reporting the hatch as the most threatening they have ever known.

Arkansas. Little Rock Democrat (May 21): The first report of grasshopper damage was received today from Poinsett County, where 50 acres of cotton and soybeans have been destroyed.

North Dakota. F. G. Butcher (May 24): Grasshopper hatching just getting under way in the western and central counties. The predominant species is Melanoplus mexicanus Sauss., hence early injury is apparent in wheat fields.

South Dakota. H. C. Severin (May 21): Reports of large hatches of grasshoppers have been sent from a few counties. We do not expect as serious an outbreak as that of last year.

Nebraska. M. H. Swenk (May 20): Grasshoppers, M. differentialis Thos., M. bivittatus Say, and other species, began hatching in south-central and northeastern Nebraska during the last week in April, but it was well toward the middle of May before the hatching became general and heavy. An exceptionally heavy hatch is now under way in at least one-third of the counties and damage is being done in fields of alfalfa, clover, and other crops.

Kansas. H. R. Bryson (May 15): Reports of the occurrence of young hoppers have been received from Chanute and Augusta, in southeastern Kansas.

J. R. Horton (May 21): A survey of 40 separate square-foot samples of wheat and alfalfa land on April 14 disclosed 11 grasshopper egg pods. Eggs viable. Hatching began about May 15. Young hoppers conspicuous today.

Oklahoma. C. F. Stiles (May 20): Grasshoppers are being reported in large numbers throughout the northern and western sections of the State. Osage and Comanche Counties report that they are three times as numerous as they were in 1936. At present they are quite small and a number of species are involved.

Texas. R. R. Reppert (May 26): Cottle, Dallam, Gray, Hamilton, Hardeman, Lipscomb, Throckmorton, and Wheeler Counties are reporting heavy infestations of grasshoppers.

Montana. H. B. Mills (May 20): Hoppers are now hatching throughout the State. They are extremely abundant but infestations are spotted. Some are in the third instar.

Idaho. J. R. Douglass (May 8): Young grasshoppers were observed in the foothills of the Snake River plains of south-central Idaho.

Utah. G. F. Knowlton (May 8): Nymphs are becoming moderately abundant in some fields in northern Utah. (May 17): They are damaging young beets at Provo, Utah County, and are especially abundant in alfalfa west of Kaysville, Davis County. One winged adult, Trimerotropus vinculata Scudd., was observed at Farmington, Davis County.

Nevada. G. G. Schweis (May 25): Grasshoppers have been reported from Lyon and Washoe Counties in destructive numbers and control campaigns are being inaugurated.

California. S. Lockwood (May 10): Grasshoppers in San Luis Obispo County range from the first nymphal instar to adults. The outbreak is not as serious as that of 2 years ago. Grasshoppers are appearing in great numbers in Imperial County. (May 25): M. mexicanus is more than ordinarily abundant in the Imperial Valley. Most of them are adults or are in the fifth instar. Mating has not been observed. Alfalfa, melons, and other vegetable crops are being considerably damaged.

MORMON CRICKET (Anabrus simplex Hald.)

South Dakota. H. C. Severin (May 21): Mormon crickets have been reported as very abundant in Mellette and Lyman Counties. If these crickets become seriously harmful in South Dakota this year, it will be for the first time. Heretofore, the crickets were regarded chiefly as a curiosity.

Montana. H. B. Mills (May 20): Mormon crickets are worse this year than ever before. They cover considerable territory in a triangular area extending from Madison and Powder River Counties on the south to Hill and Glacier Counties on the north.

Wyoming. C. L. Corkins (April 28): Hatching was reported in the Crooked Creek area in northern Big Horn County on April 5. Dusting operations were started in this district April 19. On April 27 the crickets were in the second instar and were severely damaging alfalfa fields. April 27 the hatch was out over all the lowlands in Sheridan County and covers all of

the area shown in the fall egg survey. The hatch was also out in Crook County and covers twice as much territory as shown in the fall survey. Eggs have started to hatch in the lowlands of Converse County, but have not yet hatched in Washakie, Teton, and Lincoln Counties, as the beds have been covered with snow. Dusting operations were started in Sheridan and Crook Counties April 26.

Idaho. C. Wakeland (May 25): In the earliest counties Mormon crickets are reaching the sixth instar in development, while in the later areas they are in the first and second instars. The crickets farthest advanced in development are migrating freely and invading adjacent cultivated areas. The population is much heavier and more widely distributed in western Idaho than in 1936.

Utah. C. J. Sorenson (May 20): Infestations in Juab, Millard, and Tooele Counties are heavier and more widespread than in 1936. Hatching began late in February in parts of Tooele County and on March 5 in Millard County.

Nevada. G. G. Schweis (May 25): The control campaign against the Mormon cricket is underway in Elko, Humboldt, Eureka, and Lander Counties.

WIREWORMS (Elateridae)

Connecticut. N. Turner (May 4): About one-half acre of transplanted lettuce in Bridgeport badly damaged by Melanotus sp. Fifty percent of the plants killed, 3 to 4 wireworms per plant.

Maryland. E. N. Cory (May 19): Larvae are injuring young tomato plants at Hagerstown.

South Carolina. F. Sherman (May 24): Wireworms are injuring tobacco in eastern South Carolina, reported by J. G. Watts.

W. M. Lunn and N. Allen (May 22): Slightly more than 16 acres of tobacco is being grown on the Pee Dee Experiment Station farm, in Florence County. The plants were transplanted during April and the first part of May, and it has since been necessary to replace approximately 60 percent of them. Examination of plants in the field shows that from 70 to 80 percent of all plants have been injured by wireworms, approximately 20 percent of the plants having been destroyed.

Indiana. J. J. Davis (May 27): Wireworms have been reported as destroying corn at Greensburg and Paoli.

Missouri. L. Haseman (May 26): Scattered reports of wireworm injury have been received from points throughout the State, the last ones referring to damage to winter barley.

North Dakota. J. A. Munro (May): Farmers in eastern counties are expressing concern about the possibility of serious injury to corn, barley, and other crops from wireworms. Reports indicate that the wireworm population is especially high in fields which were summer-fallowed last year.

Nebraska. M. H. Swenk (May): On May 1 a Custer County correspondent reported that his field, just recently plowed, was badly infested with corn-wire-worms (Melanotus sp.). A complaint of wireworms damaging planted potatoes in Antelope County was sent in on May 19.

Oregon. H. P. Lancaster (May 24): Larvae of Limonius canus Lec. and L. californicus Mann. were found feeding on nearly every pea plant examined in lowland on both sides of a small stream near Athena, Umatilla County, in northeastern Oregon. About 50 percent of the plants have been killed.

California. M. W. Stone (April 30): Specimens of Acolus livens Lec. submitted by C. S. Morley of Kern County, who reported they were damaging melons near Bakersfield.

A CURCULIONID (Amalus haemorrhous Hbst.)

Washington. W. W. Baker (May 12): Five specimens have been swept from clover, grass, mustard, Rumex acetosella, and equisetum growing near the laboratory at Puyallup. Attempts to find it on heather have so far been unsuccessful.

A CURCULIONID (Naupactus leucoloma Boh.)

Florida. J. R. Watson (May 22): This insect, which was discovered last year for the first time in a small section of Okaloosa County and adjacent parts of Alabama, is again active. The grubs are doing severe damage over a limited area. In some fields a third of the cotton plants were being destroyed and three-fourths of the corn. The pest was also attacking velvetbeans and peanuts. It seems to be a general feeder. No adults and no pupa were observed the middle of May. Identification by L. L. Buchanan.

JAPANESE BEETLE (Popillia japonica Newm.)

Connecticut. W. E. Britton (May 21): Lawn diggings indicate that the Japanese beetle will doubtless be more abundant this year than ever before in Branford, Bridgeport, Hartford, New London, New Haven, and Ridgefield, all in the southern part of the State.

ORIENTAL BEETLE (Anomala orientalis Wtrh.)

Connecticut. W. E. Britton (May 21): This insect is spreading slowly in the vicinity of New Haven, where many untreated lawns have been injured. We are now finding it in some other towns and cities.

New York. W. E. Blaauvelt (May 24): A heavy infestation of grubs was observed in a large lawn at Wheatley Hills, Long Island, on May 12. Several square-foot diggings in the worst-infested part yielded an average of 80 grubs per square foot. Much of the turf had been killed out. (Det. by H. C. Hallock.)

ASIATIC GARDEN BEETLE (Autoserica castanea Arrow)

Connecticut. W. E. Britton (May 21): Some injury by the adults to various flowering plants in New Haven has been observed but seldom are the grubs found in lawns. Two lots of grubs received this spring indicate that this beetle may soon become troublesome also as a lawn pest.

New York. W. E. Blauvelt (May 24): Considerable injury to lawn turf was observed at Rye, Westchester County, on May 10. (Det. by H. C. Hallock.)

MAY BEETLES (Phyllophaga spp.)

Vermont. H. L. Bailey (May 25): Up to May 25 only a few scattered adults were noted at Montpelier, Washington County, central Vermont.

Georgia. T. L. Bissell (May 14): On May 5 we received a report of damage to pecan trees by May beetles, the first record of injury this year.

Virginia. G. R. French (May 22): I was struck with the large numbers of one of the May beetles in Culpeper and Rappahannock Counties this week. I saw one 20-foot oak tree that was entirely stripped and a neighboring maple was partly defoliated.

R. A. St. George (May): P. fervida F., P. inversa Horn, P. fraterna Harr., and P. hirticula Knoch, were collected at Falls Church on May 4 and 5.

Kentucky. W. A. Price (May 22): Hordes of May beetles are feeding on oak and persimmon trees at Lexington. This is the first real damage they have done.

Wisconsin. C. L. Fluke (May 20): Flights of the adults have been light, as temperatures so far have been too low for extensive ones. The first appearance was noticed May 7.

Minnesota. D. J. Pletoch (May 1): White grubs have caused much damage to pasture in Goodhue County. Upon digging damaged hillside slopes, some adults were found near the surface. These were P. tristis F., most abundant, and P. fusca Froel. At depths of from 6 to 18 inches numerous larvae were found. Some were Brood A, but apparently most were Brood B. They averaged about 5 or 6 per square foot. Last fall the entire pasture sod could be peeled back easily, but self-seeding has brought back most of it.

North Dakota. J. A. Munro (May): May beetles moderately abundant at Fargo. Most of the adults are in the top layer of soil but a few have been observed in flight.

Utah. G. F. Knowlton (May 18): A few adult brown May beetles were collected at Logan during the past week.

CUTWORMS (Noctuidae)

New York. R. W. Leiby (May 20): Reports of cutworm damage indicate that these insects are present over the State in more than average numbers. Control measures being generally applied.

South Carolina. W. C. Nettles (May 21): Cutworms were damaging cotton and truck crops near Ridgeland the first part of May.

Florida. F. S. Chamberlin (May 6): Cutworms are causing more damage than normal to newly set tobacco in Gadsden County. Infestations are most harmful in the later settings.

Ohio. T. H. Parks (May 24): An outbreak of climbing cutworms on grapes developed in a large vineyard in Franklin County, central Ohio, the week of April 25. The cutworms were rapidly devouring the young grape buds. The adjoining county, Fairfield, was the only other county from which similar trouble was reported.

Indiana. J. J. Davis (May 27): Cutworms have damaged onions and buds of apple and peach in northern Indiana.

Kentucky. W. A. Price (May 24): Cutworms are abundant over the State.

Michigan. R. Hutson (May 20): Climbing cutworms have been injurious in various parts of the State. We have had numerous reports of injury.

Wisconsin. E.L. Chambers (May 25): Losses from cutworms are being reported from the light, sandy areas of Waushara, Waupaca, and Shawano Counties, in southeastern Wisconsin.

C. L. Fluke (May 20): Cutworms are showing up in large numbers in central Wisconsin.

Tennessee. L. B. Scott (May 8): Cutworms are extremely abundant and seriously damaging tobacco, corn, tomatoes, and peppers in Montgomery County. (May 25): As many as 10 dead cutworms found near one tobacco plant in a field near Clarksville which has been treated with poison bait. This field averaged $3\frac{1}{2}$ dead worms per plant. Many growers who failed to use bait have been forced to reset more than 50 percent of their plants. A man from the laboratory collected 700 cutworms in a neglected pasture in 90 minutes.

Mississippi. C. Lyle (May 24): Specimens of Lycophotia margaritosa saucia Hbn. on cotton were received from Yazoo City on May 5 and from Cruger on May 9. Cutworm damage in the Delta is small, as compared to last year, according to N. L. Douglass of Grenada. Specimens of Agrotis ypsilon Rott. were collected by D. W. Grimes on cotton on three plantations at Cary and Blanton, in Sharkey County.

Louisiana. C. O. Eddy (May): Cutworms were reported to be very abundant in all parts of Louisiana.

Missouri. L. Haseman (May 13): A few moths of the greasy cutworm (*A. ypsilon*) were noticed about May 3 to 7 in central Missouri. (May 26): Serious complaints of cutworms are coming from the southern third of the State. In the central part half-grown cutworms are abundant and are damaging young plants.

Arkansas. D. Isely (May 20): Injury by L. margaritosa saucia in Washington, Independence, Pulaski, Lonoke, Prairie, Monroe, and Arkansas Counties. Injury to alfalfa reported most frequently.

North Dakota. F. G. Butcher (May 24): Reports of serious injury to cereals by Porosagrotis orthogonia Morr. in several counties in the western half of the State.

South Dakota. H. C. Severin (May 21): Cutworm damage is about normal over most of the State, but in certain areas the damage is more serious than usual.

Kansas. H. R. Bryson (May): Cutworms were seriously injuring ripe strawberries at Manhattan the last of May. The pale western cutworm was reported as causing considerable damage to wheat in west-central and northwestern Kansas from April 24 to May 1. Moths of the army cutworm (Chorizagrotis auxiliaris Grote) were reported as appearing in large numbers in one locality in west-central Kansas on May 20. On May 27 the variegated cutworm was attaining a considerable population in the eastern half of Kansas and some reports of injury have been received. Larvae are from one-half to two-thirds grown.

J. R. Horton (May 26): At Wichita damage by the variegated cutworm is becoming severe to wheat and young corn. Larvae are migrating from cut alfalfa to garden crops and onions are being destroyed. Some larvae are two-thirds grown.

H. H. Walkden (May 19): Approximately 5,000 fields of wheat were destroyed in Rawlins, Rush, Decatur, and Meade Counties in western Kansas, during the latter part of April and early in May by the pale western cutworm. (May 20): The army cutworm was found in large numbers under cowslips in several counties in northwestern Kansas during the early part of May.

Oklahoma. C. F. Stiles (May 20): Cutworms are severely damaging gardens and all truck crops throughout the eastern half of the State. The variegated cutworm (L. margaritosa saucia) is numerous throughout the State. More than a dozen telephone calls have been received in regard to control measures.

Montana. H. B. Mills (May 20): An army cutworm, C. agrestis Grote, was abundant in spots, especially in Rosebud, Stillwater, and Gallatin Counties about May 1, although little damage is reported.

Idaho. C. Wakeland (May 25): Cutworms are destroying stands of sugar beets in southwestern Idaho and a few fields are being replanted to other crops. The long, cool spring has delayed development of the larvae and they have done an unusual amount of damage. Cutworms are also very abundant in range areas but injury is not easily apparent.

Utah. C. J. Sorenson (May 20): Cutworms are appearing in Utah County, at Cedar Valley and Lehi West Hills. A few localities on Levan Ridge, Juab County, also showing damage.

California. J. Wilcox (May 12): L. margaritosa saucia completely defoliated 4 acres of tomatoes in a strip about 1 foot wide at San Juan Capistrano, Orange County.

BEET WEBWORM (Loxostege sticticalis L.)

Montana. H. B. Mills (May 20): First appearance of adults this spring about May 16 at Bozeman, Gallatin County.

Idaho. J. R. Douglass (May 22): The adults were observed in very large numbers over an area of several square miles in the Raft River district on May 21. Upon examining the soil, numerous old cocoons were observed.

C. Wakeland (May 25): An extensive outbreak is imminent in southern and southeastern Idaho. Moths were very abundant in Russian-thistle areas last autumn and in the same areas countless numbers are now in flight at dusk.

Utah. G. F. Knowlton (May 28): Sugar beet webworm moths are becoming alarmingly abundant in Cache and Davis Counties.

H. E. Dorst (May 25): Enormous numbers of beet webworm moths have been taken in light traps in northern Utah. Many moths have been observed in sugar beet fields in Sevier Valley.

SALT-MARSH CATERPILLAR (Estigmene acraea Drury)

Georgia. T. L. Bissell (May 7): Moths are unusually numerous in central Georgia at Experiment and Milner.

Florida. H. T. Fernald (April): Caterpillars are feeding in enormous numbers on fields yellow with blossoms of Senecio lobatus along the St. Johns River west of Mims and probably all along the river.

A CABBAGE BUTTERFLY (Pieris monuste L.)

Florida. H. T. Fernald (May): A flight, under way February 6, seemed to have been checked by colder weather. It was under way again at Daytona Beach (going north) on April 10; still going north on April 24 at Daytona Beach; and I saw a car in Orlando on May 1 with many butterflies on the radiator. It had evidently come in from the East Coast. On May 10 I drove to Indian River City, then north to Daytona. The migratory flight was over, although a little north of New Smyrna they were quite abundant, feeding freely on Bidens sp., and what little movement there was was northward. Practically none at Daytona.

CRANE FLIES (Tipulidae)

Kentucky. W. A. Price (May 24): Crane flies are very abundant at Lexington.

Missouri. L. Haseman (May 26): During the last 10 days of May one of the heaviest flights of a large species of crane fly that I have ever seen in the State has appeared throughout central Missouri. In places the shrubbery, tree foliage, and grasses are literally swarming with these crane flies.

C E R E A L A N D F O R A G E - C R O P I N S E C T S

WHEAT AND OTHER SMALL GRAINS

CHINCH BUG (Blissus leucopterus Say)

Indiana. J. J. Davis (May 27): Chinch bugs are not yet abundant in small grain, as indicated by a few observations, but the bugs are being collected in noticeable numbers in sweepings in wild grasses.

Illinois. W. P. Flint (May 24): Chinch bugs have been very slow in leaving winter quarters because of the abnormally cool weather. Flights from winter quarters are still going on. Bugs are not all concentrated in small grains, even at this late time.

South Carolina. W. C. Nettles (May 21): On May 15 serious chinch bug outbreak was reported in York and Chester Counties.

Mississippi. C. Lyle (May 24): On April 26 a field of young corn was being destroyed at Magnolia in the southwestern part of Mississippi. Complaints of chinch bugs are rarely received from that section. A complaint was received from Meridian on May 15 and reports of serious local damage to corn on two plantations near Durant have been received.

Kansas. H. R. Bryson (May 22): Chinch bugs are present but not numerous at Manhattan.

Oklahoma. F. A. Fenton (May 24): One report on chinch bug damage was received from Claremore.

HAIRY CHINCH BUG (Blissus hirtus Montd.)

New York. W. E. Blauvelt (May 24): Adults were observed laying eggs at Locust Valley on May 1. Infestations in lawns were observed at Port Chester and Mamaroneck on May 10, at Locust Valley and Wheatley Hills on May 12, and at St. James on May 14, all in the vicinity of New York City.

APHIDS (Aphididae)

Virginia. W. J. Schoene (May 24): Alfalfa fields and oat fields at Blacksburg are being seriously injured by aphids of an undetermined species.

A. M. Woodside (May 22): Aphids are general on grain crops, but no heavy infestations have been observed, except on barley near Timberville, in Rockingham County.

ARMYWORM (Cirphis unipuncta Haw.)

Maryland. C. G. Woodbury (May 31): The country between Cape Charles and Cheriton is alive with armyworms, attacking wheat and vetch.

Virginia. H. G. Walker and L. D. Anderson (May 25): Outbreaks of armyworms have occurred in a few fields of oats, barley, and corn near Norfolk, but in general the infestation has not been as general or as severe as last year.

Indiana. J. J. Davis (May 27): Moths of the armyworm have been abundant at lights during the past week.

Illinois. W. P. Flint (May 24): There has been a moderately heavy flight of adults. Young worms are now common in heavy grass growth in the southern third of the State.

Kentucky. W. A. Price (May 26): Specimens of the armyworm were received in the mail today from Morganfield in Union County, western Kentucky, with the statement from the county agent that the outbreak was rather widespread.

Assoc. Press, Washington, D. C., Evening Star (May 31): Thousands of armyworms infested rye fields near Oakland, Warren County, in the western part of the State.

Florida. J. R. Watson (May 22): A single specimen of the true armyworm was sent in from Monticello. This is the first report of this insect in Florida for many years.

Mississippi. C. Lyle (May 24): An unusual outbreak of the true armyworm occurred in the Mississippi Delta the last of April and the first half of May. The first specimens were received from Vicksburg on April 26. Complaints were then received from Sharkey, Tallahatchie, Leflore, Sunflower, Washington, and Bolivar Counties. The chief damage occurred on oats and some fields were practically destroyed before control measures were employed. Alfalfa was attacked in some fields.

Missouri. L. Haseman (May 13): Armyworm moths were present from about May 3 to 7 in central Missouri, sucking nectar from apple blossoms in such numbers as I have never seen them before at this time of the year. With a flashlight I was able to detect as many as a half a dozen to a square rod of tree surface. (May 26): The first report of serious damage to small grain, especially barley, came in on May 20 and 21, from southeastern and southwestern Missouri. At that time the worms were large enough to be literally destroying some barley fields. This morning the county agent at Springfield told me the armyworms were ruining barley in Greene County. The Sikeston area in southeastern Missouri, the Springfield area in southwestern Missouri, and the Joplin area in southwestern Missouri are badly overrun. Half-grown worms are doing serious damage to small grains, meadows, and pastures in the southern third of Missouri and similar injury is expected during the next two weeks throughout central and possibly northern Missouri.

Arkansas. D. Isely (May 20): The most extensive outbreak of armyworms on record in Arkansas came to a head during the last 2 weeks. The principal damage has been to winter oats. This injury has been most acute in eastern

and southeastern Arkansas. In a large part of this area all oat fields have been rather generally infested. In Arkansas County, where there are approximately 80,000 acres of winter oats, probably one-fourth of the crop was lost. Scattered injury has appeared in other counties of the northern part of the State. This injury is spotted, occurring only in occasional fields, and in spots within the fields. There has been some damage to row crops and pastures. Migrations of armyworms have usually been from oats to other crops. The outbreak is in Benton, Boone, Washington, Crawford, Franklin, Independence, Pulaski, Lonoke, Prairie, Saint Francis, Monroe, Lee, Jefferson, Arkansas, Phillips, Lincoln, Desha, Drew, and Chicot Counties. It now seems to be well under control.

Fort Smith American (May 18): Crops in the immediate vicinity of Fort Smith, Sebastian County, are being damaged seriously by armyworms.

Oklahoma. C. F. Stiles (May 20): The true armyworm is present throughout the State. It is severely injuring all small grains, especially wheat, rye, and barley. This is the most severe outbreak Oklahoma has experienced. Wheat that a week ago would have made 40 bushels per acre is now not worth cutting, and the ravages continue unchecked. (May 27): Armyworms are devouring everything in northeastern Oklahoma.

F. A. Fenton (May 24): On May 13 a report was received of infestation from the true armyworm at Grandfield, Tillman County, in southwestern Oklahoma. Following this, calls for help were received from widely scattered counties--Jackson, Comanche, Cotton, Caddo, Grady, Garvin, and Jefferson--in the southwestern part of the State. The infestation extends across Oklahoma into Osage County and to the Kansas border. The damage is mostly in wheat, but oats and barley are also being injured. The larvae are beginning to move out into row crops, mostly corn and cotton.

Texas. F. L. Thomas (May 17-21): Armyworms reported in wheat and causing injury in Wilbarger, Clay, and Grayson Counties on the Red River. They are about two-thirds grown.

FALSE WIREWORMS (Eleodes spp.)

South Dakota. H. C. Severin (May 21): The plains false wireworm (E. opaca Say) is extremely abundant in the drier areas of South Dakota and is doing much damage to wheat.

Nebraska. M. H. Swenk (May 12): The latest report of the season for the Plains false wireworm was on May 12, when these pests were reported to be damaging the roots of wheat plants in Hitchcock County.

Idaho. C. Wakeland (May 25): Larvae of E. hispilabris Say and E. extricata Say are injuring spring-planted and fall-planted wheat in dry-farming areas in eastern Idaho. A control district operating in Teton expects to distribute poisoned bait over an area of approximately 10,000 acres not treated last fall. Approximately 15,000 acres were poisoned last fall.

CORN

CORN EAR WORM (Heliothis obsoleta F.)

Georgia. T. L. Bissell (May 25): A young peach orchard at Zebulon, central Georgia, has been attacked by larvae eating into the fruit. The orchard was planted in Austrian winter peas, which have just been turned under.

Florida. H. T. Fernald (May 14): Young corn at Orlando has been badly attacked by what the farmers call the "budworm." I think it the corn ear worm and W. W. Yothers confirms this. The attacks were most severe the latter part of April.

Alabama. J. M. Robinson (May 26): The corn ear worm is attacking cornstalks in Opelika.

Mississippi. J. Milton (May 24): Tomatoes at Florence are being seriously damaged.

Louisiana. L. O. Ellisor (May): The corn ear worm is seriously damaging tomatoes in the southern part of the State. Corn is also being damaged.

California. J. Wilcox (May 10): A sixth-instar larva was swept from alfalfa at Artesia on May 4, and on May 10 larvae from first to fourth instar were found feeding on the leaves and tassels of corn at Vernon, Los Angeles County. Several eggs of the tomato fruitworm were found on tomato plants in the field in Orange and Los Angeles Counties, and a comparatively large number of moths emerged last week. Scattered emergence of moths has been taking place since February 19. On May 3 M. W. Stone found first- and fourth-instar larvae feeding on strawberries he had purchased at Stanton. (May 25): About 25 percent of the tassels in a field of early sweet corn at Vernon, Los Angeles County, are infested with larvae from first to fourth instar. The larger larvae had moved from the tassels to the newly formed ears. Sweet corn from Indio, Riverside County, on the market was found on May 17 to be infested. A full-grown larva was found in a green tomato at Costa Mesa, Orange County, on May 19. Moth emergence has continued heavy at Alhambra, Los Angeles County.

SUGARCANE BEETLE (Euetheola rugiceps Lec.)

Mississippi. C. Lyle (May 24): Complaints of serious damage to corn were received from Vaughn on May 4 and from Cruger on May 19.

Louisiana. J. W. Ingram (May 18): Beetle injury to sugarcane began in March and reached its peak late in April and early in May in southern Louisiana. Injury is practically over now as few freshly injured plants can be found. Losses have been about the same as in 1936, which is below the average for the last 10 years. As in past years, injury was heaviest in the section west of the Atchafalaya River.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

South Carolina. F. Sherman (May 24): At Florence in eastern part of State damage is considerable in low, heavy soils but not severe in uplands as reported by J. G. Watts.

Georgia. T. L. Bissell (May 14): Budworm injury to corn is noticeable at Experiment, in central Georgia. Larvae are about full-grown.

Louisiana. C. E. Smith (May 20): Injury to corn at Baton Rouge by the larvae occurred largely during the period from April 18 to 26. In some localized areas 75 percent or more of the stands were destroyed.

IMBRICATED SNOUT BEETLE (*Epicaerus imbricatus* Say)

Missouri. L. Haseman (May 26): Reported as doing serious damage to corn in the northwestern corner of the State. Present in scattered numbers in central Missouri.

CORN FLEA BEETLE (*Chaetocnema pulicaria* Melsh.)

Z. P. Metcalf (May 29): The corn flea beetle is occurring on corn throughout the State in more than usual abundance.

ALFALFA AND CLOVER

PEA APHID (*Illinoia pisi* Kitb.)

Virginia. A. M. Woodside (May 22): Alfalfa near Timberville has been very heavily infested by an aphid, presumably the pea aphid. Some stands were practically killed out.

Louisiana. C. L. Stracener (May): Pea aphid is still active.

Kansas. H. R. Bryson (May 23): The pea aphid occurred all over the State in alfalfa fields but the alfalfa has made sufficient growth to prevent injury. The population reached a relatively high point by the middle of May but is now receding.

W. T. Emery (May 18): This insect has been so scarce in Kansas since the fall of 1935 that no infestations or even individual specimens have been taken in extensive sweeping until this spring, when it is being found in abundance in alfalfa, around Manhattan.

Idaho. C. Wakeland (May 25): The pea aphid is fairly abundant on alfalfa in southwestern Idaho but is relatively scarce on adjacent peas, the earliest of which were in early blossom stage on May 18.

Utah. G. F. Knowlton (May 8): Pea aphids are becoming increasingly abundant in parts of northern Utah and less abundant in most of Cache and Morgan Counties. Second-generation adults are now present on alfalfa. (May 27): Pea aphids continue to increase in abundance on alfalfa but are not yet seriously threatening the pea crop. Aphids were found to be the most abundant on peas at Mapleton Bench, in Utah County, and at Layton, in Davis County.

Washington and Oregon. L. P. Richmond and M. M. Keeher (April): *I. pisi* is somewhat more abundant than last year east of the Cascade Mountains in the Yakima and Columbia Valleys and in the irrigated sections of Umatilla County, Oreg. Fields in sandy areas and near the large rivers showed the highest populations and in these fields from 5 to 10 percent were already alates. No damaging populations were found. Coccinellid beetles were

much less abundant than last year.

Oregon. L. P. Richmond and M. M. Reehler (May 7): I. pisi showed a low winter survival on alfalfa after the long, dry fall and cold winter. The survival on fall-sown vetch and peas was very light and only a few fields came up in time to become infested last fall. Aphids increased slowly in April but it is believed that natural enemies will keep them in check. No damage to alfalfa and fall-sown legumes. No signs of migration from alfalfa to annual legumes, although alates are present at the rate of about 4 percent of the population on alfalfa in some fields and there have been a few warm days. Coccinellid adults, especially Coccinella trifasciata L., outnumber the aphids in some fields and there are many syrphid flies.

ALFALFA WEEVIL (Hypera postica Gyll.)

Utah. G. F. Knowlton (May 17): Adults are present in considerable numbers in many northern Utah localities, from 0.3 to 1.25 being taken per sweep of the insect net on alfalfa. Fifteen adults and some larvae were taken in 15 sweeps at Draper. (May 27): Alfalfa weevil injury is increasing, but is light to moderate in most of the fields examined in northern Utah.

Nevada. G. G. Schweis (May 25): Alfalfa weevils have been reported as hatching in great numbers in Douglas County. From observations in the field, it is believed that hatching is at least 2 weeks late.

California. A. E. Michelbacher (May 21): A survey of the alfalfa weevil situation on May 14 gave the following results: In the San Joaquin Valley the larval count per 100 sweeps of an insect net for different fields ranged from 7 to 210, while the adult count ranged from 15 to 37. In Pleasanton the larval count ranged from 43 to 330, and the adult count from 0 to 4. In the San Francisco Bay district the larval count ranged from 35 to 53, and the adult count from 0 to 1. On May 5, parasitization of the large larvae by Bathyplectes curculionis Thos. in the San Joaquin Valley averaged more than 90 percent, a marked increase over that found on April 28. In the most heavily infested field in Pleasanton parasitization was 86.5 percent, the lowest encountered this season. Parasitization in the San Francisco Bay district was greater than 90 percent, although on April 30 it dropped to 57 percent in the most heavily infested field, which was also suffering from neglect and delayed cutting.

CLOVER LEAF WEEVIL (Hypera punctata F.)

Ohio. T. H. Parks (May 24): The clover leaf weevil has been more abundant than usual in clover and alfalfa generally.

Indiana. J. J. Davis (May 27): The clover leaf weevil has been unusually abundant and caused considerable damage. The first specimens were received on May 7 from Lebanon in central Indiana. Since that time specimens have been received from localities over much of the State. Clover is the crop attacked, except in one report which mentioned alfalfa as the food.

Kentucky. W. A. Price (May 24): Damage to clover and young alfalfa plants was severe in many places in the State, particularly at Horse Branch, Shelbyville, Maysville, Lexington, and Louisville.

Michigan. E. I. McDaniel (May 26): The other day we received a quantity of clover leaf weevil from Eaton Rapids where it was attacking a large field of clover. About 20 acres of alfalfa clover was involved.

Iowa. C. J. Drake (May 19): The clover leaf weevil showed up in a number of counties in southeastern Iowa, but little commercial damage has been reported.

Kansas. H. R. Bryson (May 20): Reports from northeastern Kansas indicate that the clover leaf weevil is abundant.

GREEN CLOVER WORM (*Plathyphena scabra* F.)

Virginia. A. M. Woodside (May 22): Alfalfa in the vicinity of Timberville was found to have a moderate infestation of the green clover worm.

Louisiana. L. O. Ellisor (May): The green clover worm was present on alfalfa throughout the winter in southern Louisiana. The caterpillars were not sufficiently abundant at any time to cause serious damage.

VETCH

VETCH BRUCHID (*Bruchus brachialis* Fahraeus)

North Carolina. J. S. Pinckney (May 31): Egg deposition by the vetch weevil began on May 19 at Salisbury, Rowan County, and has about reached its peak. Egg deposition is heavy and is general over all of the central part of the State. The first larva was found on May 24. Four new counties have been added to the distribution, viz., Burke, Caldwell, Polk, and Rutherford, infestations having been discovered on May 28.

SUGARCANE

SUGARCANE BORER (*Diatraea saccharalis* F.)

Louisiana. E. K. Bynum (May 18): The number of live borer stages found to have overwintered in replicated overwintering experiments, where treatments were similar, was several times greater this year than in 1936.

F R U I T I N S E C T S

CHERRY SCALE (Aspidiotus forbesi Johns.)

California. S. Lockwood (May 5): Yesterday Forbes scale was found by the writer on toyon in Yolo County. This, I believe, is the second report on the presence of this scale in California and represents to us a new county infested and a new host.

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York. D. W. Hamilton (May 24): Pupae were found as early as May 10 at Poughkeepsie; however, no emergence has occurred to date. A heavy second brood in many orchards in 1936 and a mild winter, with a minimum temperature of 40° F., indicates that a heavy flight of spring brood moths may be expected.

Pennsylvania. H. N. Worthley (May): Moths were first taken in bait pails on May 19 in south-central Pennsylvania and began to emerge in cages on the tree trunks on May 20. This is 9 days later than in 1936. Winter carry-over of larvae has been heavier than in recent years.

Delaware. L. A. Stearns (May 22): Pupation of over-wintered larvae on May 16 was 94 percent; first emergence of spring-brood moths in southern Delaware on May 6 and in northern Delaware on May 14; first moths collected in bait pans on May 13; first first-brood eggs deposited, May 16; no larvae hatched as yet. Development delayed a full week, as compared with 1936.

Virginia. A. M. Woodside (May 15): Moth emergence started late in Augusta County and has been slow. The first moths were taken in bait traps on May 15, although a few emerged in the lofts of packing sheds as early as May 10.

Georgia. C. H. Alden (May 22): Spring-brood emergence about over. First-brood eggs hatching and half-grown larvae noted in apples at Cornelia, northeastern Georgia.

Ohio. T. H. Parks (May 24): Adults were first caught in bait pans in Lawrence County, southern Ohio, on May 17, and at Columbus on May 23. With one or two exceptions, the nights have been too cool for egg laying and development is 10 days behind that of 1936.

Indiana. J. J. Davis (May 27): Codling moth wintered in large numbers, but the cold, wet weather prevailing up until a week or 10 days ago, has delayed emergence and egg laying. No emergence north of Lafayette, according to our observations. The first eggs hatched at Orleans on May 27.

L. F. Steiner (May 26): Spring-brood emergence, as indicated by bait trap captures at Vincennes began on May 9, but there was very little activity until May 17. Since then there has been a steady increase in moth abundance. Activity is now at, or very near, its peak. The first entrances were found today. In extreme southwestern Indiana adult activity apparently reached its peak on May 20. Moths now appear to be more abundant than at any time during the 1936 season.

Illinois. W. P. Flint (May 24): Adults are emerging over the entire southern half of the State. From present indications, the winter survival has been high and a heavy first brood is indicated.

Kentucky. W. A. Price (April 30): Our first record of moth emergence this season was on April 30 at Paducah.

Michigan. R. Hutson (May 20): Over 50 percent of codling moth have pupated in the vicinity of Shelby, Grand Rapids, and Fennville.

Missouri. L. Haseman (May 26): The peak of first-brood moth emergence is occurring in the Marionville district, southwestern Missouri. We are expecting the peak to be reached by the end of this week or the first of June in central Missouri and in the St. Joseph and Louisiana, Mo., areas.

Arkansas. D. Isely (May 20): Codling moths are unusually late this season, with no appreciable emergence in northwestern Arkansas until after May 1.

Washington. E. J. Newcomer (May 21): Emergence began on May 4 in Yakima County, but has been slow on account of cool weather. A few eggs were found on May 18. The season is about 2 weeks later than last year.

EASTERN TENT CATERPILLAR (Malacosoma americana F.)

Maine. F. H. Lathrop (May 19): Newly hatched larvae were observed on apple trees at Orono, in Penobscot County, on April 30. By May 12 the nests were beginning to be noticeable on wild cherry trees along the roadsides in Kennebec and Androscoggin Counties.

Vermont. J. V. Schaffner (May 24): Noticed caterpillars hatching on April 20 at Springfield. Infestations rather general and heavy in Bennington and Windham Counties.

Massachusetts. J. V. Schaffner (May 24): Apple and wild cherry trees are heavily infested in many localities through Berkshire, Franklin, Hampden, and Worcester Counties. P. A. Berry reports that the tents are noticeable in the eastern part of the State.

Connecticut. W. E. Britton (May 13): Although abundant in some localities, in general throughout the State this insect is less abundant than in 1935 and 1936.

B. W. McFarland (May 13): Infestations at Bloomfield, East Granby, and Windsor are the worst that have been observed in these three localities during the last few years. Nests were found in three white pines and the caterpillars were attempting to feed on the trees.

J. V. Schaffner (May 24): The eastern tent caterpillar is abundant in many localities throughout the western half of Connecticut.

New York. R. D. Glasgow (May 22): Abundant again this spring in many parts of eastern New York. The so-called wilt disease of this caterpillar, reported from parts of Albany County somewhat later in the spring of 1936, is appearing in other parts of the county this year.

R. E. Horsey (May 11): Unusually abundant on apple, ornamental crab apple, flowering and fruit cherries, and wild plums at Rochester. First noted on May 2, when the caterpillars were $\frac{1}{4}$ inch long and webs $1\frac{1}{2}$ inches in diameter. Still hatching at this date, May 11. A ride through the country south of Rochester on May 9 found them numerous.

N. Y. State Coll. Agr. News Letter (May): The tent caterpillar is abundant in the apple-growing sections of both eastern and western New York.

Pennsylvania. H. N. Worthley (May 21): Tents are now conspicuous on wild cherry and neglected apple trees. Between State College and Gettysburg the infestation is not as heavy as in 1936.

Indiana. J. J. Davis (May 27): Again showing up in unusual numbers in some parts of the State; in fact, they are so abundant on some trees that food is scarce and disease is making quite an inroad.

PISTOL CASEBEARER (Coleophora malivorella Riley)

Pennsylvania. H. N. Worthley (May 21): Becoming increasingly abundant in south-central Pennsylvania. Overwintering larvae moved from the twigs to the opening buds in mid-April. Signs of their feeding are now common on the newly set apples and on tender terminal growth.

FLATHEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Michigan. R. Hutson (May 20): Reports are coming in daily. We have recently heard of infestations in Battle Creek, Vestaburg, Grand Rapids, Howell, Lansing, and Cassopolis.

Nebraska. M. H. Swenk (May 24): Complaints of damage to fruit and shade trees continued to be received last month. The hosts were chiefly apple, elm, and cherry trees.

Oklahoma. F. A. Fenton (May 24): Damage has been reported from Ponca City, Chickasha, Shawnee, Wilburton, and Kingfisher.

FRUIT APHIDS (Aphiidae)

Maine. F. H. Lathrop (May 19): A few recently matured adults of Rhopalosiphum prunifoliae Fitch were found on an apple tree in Monmouth, Kennebec County, on May 12. This species is very scarce on apple trees in this section. Newly hatched nymphs of A. pomi Deg. appeared on apple buds at Monmouth, in Kennebec County, during the week ended April 30. This species seemed to be slightly more abundant than usual. Small colonies could be found on apple buds in commercial orchards. Cold, rainy weather during the first 2 weeks in May reduced the number of aphids. By May 15 they were difficult to find.

Connecticut. P. Garman (May 19): Anuraphis rosae Baker is unusually scarce in New Haven County.

New York. N. Y. State Coll. Agr. News Letter (May): Fruit aphids in general are less abundant than usual throughout the State. Ladybird beetles have been noted in great abundance. The percentage of rosy aphids to the other two species is higher than usual, and the first-named species is somewhat abundant in isolated infestations.

Indiana. J. J. Davis (May 27): Rosy apple aphid is reported by G. E. Marshall as increasing rapidly at Orleans and doing considerable damage.

Michigan. R. Hutson (May 20): Orchard surveys indicate the rosy apple aphid is comparatively scarce in all apple-growing sections.

Wisconsin. C. L. Fluke (May 20): Aphids in general not numerous this spring. The green apple aphid and the apple grain aphid are unusually scarce in Crawford, Dane, and Door Counties.

Kentucky. W. A. Price (May 24): Some rosy aphid is reported at Paducah.

Missouri. L. Haseman (May 26): Aphids on apple trees have been exceptionally scarce this spring.

Arkansas. D. Isely (May 20): Some injury by rose aphids on apples in a few orchards.

Idaho. C. Wakeland (May 25): The green apple aphid is very abundant on apple in Twin Falls County, south-central Idaho. Natural enemies are abundant.

LEAFHOPPERS (Cicadellidae)

Maine. F. H. Lathrop (May 19): Newly hatched nymphs of Typhlocyba pomaria McAtee were observed on the under side of apple leaves near Monmouth on May 12.

New York. N. Y. State Coll. Agr. News Letter (May): The first nymphs of T. pomaria were observed on May 6 and 10 in the Hudson River Valley and on May 17 and 20 in western New York.

Connecticut. P. Garman (May 19): Nymphs of the white apple leafhopper are present in about the usual numbers in some orchards in New Haven County. Scarce or absent in others.

Indiana. J. J. Davis (May 27): Leafhoppers are abundant on apples. The first nymphs were observed by G. E. Marshall at Orleans May 24.

Kentucky. W. A. Price (May 24): Leafhoppers are more abundant than usual at this time of year in orchards in the Paducah area. The species most abundant are Erythroneura obliqua Say and E. lawsoniana Bak.

Missouri. L. Haseman (May 26): Apple leafhoppers are much less abundant than for the last several years.

EUROPEAN RED MITE (*Paratetranychus pilosus* C. & F.)

Connecticut. P. Garman (May 19): European red mite generally scarce throughout New Haven County.

Pennsylvania. H. N. Worthley (May 21): In Adams County (south-central Pennsylvania) first-generation mites are mature, and the first eggs were seen on apple leaves on May 17. The mites are moderately abundant where dormant control measures were omitted. At State College (central Pennsylvania) the mites are very abundant on unsprayed trees. Eggs have not yet been observed.

PEACH

PLUM CURCULIO (*Conotrachelus nenuphar* Hbst.)

Maine. F. H. Lathrop (May 19): Overwintered adults were active in hibernation cages at Monmouth on May 11.

Delaware. L. A. Stearns (May 22): First overwintered adults collected by jarring at Bridgeville on April 23, which was also the peak of emergence to date.

Georgia. O. I. Snapp (May 19): The curculio infestation at Fort Valley (central Georgia) is very light. It is perhaps the lightest infestation in the 18 years during which this insect has been under observation in central Georgia by me. This is believed to be due to the lighter than usual carry-over of adults and to the high mortality during hibernation. The first full-grown larvae began to leave peach drops on May 4, which is from 2 to 3 weeks later than usual.

C. H. Alden (May 22): First-brood larvae full-grown, leaving the peaches, and making cases in the soil at Cornelia.

Missouri. L. Haseman (May 26): No evidence of the plum curculio has shown up at Columbia or Clarksville.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Idaho. R. W. Haegele (April 27): Infestations in peach, prune, and apricot are becoming common in Gem and Canyon Counties, in southwestern Idaho.

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Delaware. L. A. Stearns (May 22): Pupation of overwintered larvae on April 26 was 100 percent; first emergence of spring-brood moths in southern Delaware on April 17 and in northern Delaware on May 1; first moths collected in bait pans on May 2; peak of emergence, May 6; first first-brood eggs deposited, May 10; first larvae hatched, May 17; no twig injury observed as yet.

Georgia. O. I. Snapp (May 6): The first twig injury of the season was observed at Fort Valley (central Georgia) on May 6. The oldest larvae were about three-fourths grown. Eggs of the spring-brood moths began to hatch a little later than usual. The dates of first twig injury at Fort Valley in other years are as follows: April 10, 1925; April 20, 1926; April 1, 1927; April 25, 1928; April 4, 1929; April 29, 1930; April 22, 1931; May 17, 1932; April 20, 1933; April 24, 1934; April 3, 1935; and April 16, 1936.

Mississippi. C. Lyle (May 24): Injury to peach twigs is conspicuous for its scarcity this year. An orchard at State College which had nearly every twig infested in 1936 has no sign of injury this season.

PEACH BORER (Conopia exitiosa Say)

Georgia. O. I. Snapp (May 19): Orchards in the vicinity of Fort Valley (central Georgia) have been examined regularly, but there has been no pupation to date. The infestation is about average for this locality.

LESSER PEACH BORER (Synanthesdon pictipes G. & R.)

Georgia. O. I. Snapp (May 19): There is an average infestation in old somewhat neglected orchards at Fort Valley. The spring-brood emergence is completed and first-brood larvae are now abundant in the trees.

GREEN PEACH APHID (Myzus persicae Sulz.)

Idaho. C. Wakeland (May 25): In Twin Falls County, south-central Idaho, the green peach aphid is very abundant on peaches. Natural enemies are very abundant.

GREEN STINKBUG (Acrosternum hilaris Say)

California. S. Lockwood (April 30): The green stinkbug, locally known as the green soldier bug, is again damaging peach orchards in Merced and Fresno Counties. Inspection showed that this damage is confined to feeding punctures caused by adults.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Connecticut. P. Garman (May 19): Present in usual numbers in New Haven County.

New York. N. Y. State Coll. Agr. News Letter (May): The pear psylla is present in most orchards in the Hudson River Valley but is developing slowly. Reports indicate that the insect is more abundant in western New York.

CHERRY

BLACK CHERRY APHID (Myzus cerasi F.)

Idaho. C. Wakeland (May 25): In Twin Falls County, south-central Idaho, the black cherry aphid is very abundant on sweet cherries. Natural enemies are very abundant.

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Mississippi. C. Lyle (May 24): Specimens received from Magnolia on May 3 and from Vicksburg on May 21, both infestations being on plums.

Missouri. L. Haseman (May 26): The rusty plum louse has been very abundant for the last three weeks throughout much of the State on certain varieties of plums.

Oklahoma. F. A. Fenton (May 24): The brown plum aphid was reported as being very injurious to plums in Oilton and Stillwater.

FERRIES

RASPBERRY ROOT BORER (Bembecia marginata Harr.)

Montana. H. B. Mills (May 10): On raspberry roots in Flathead County.

Washington. W. W. Baker (May 8): At Puyallup many of the larvae have passed into the second instar and have been feeding on the new cane shoots which just started to grow and have caused serious damage by cutting down the possible new canes for 1937.

RASPBERRY FRUITWORM (Byturus unicolor Say)

Washington. W. W. Baker (May 6): The beetle was found in only one of four fields on a farm near Gardiner, in the northwestern corner of Jefferson County (30 acres of loganberries). This is our first positive record of the occurrence of the insect on the Olympic Peninsula. Damage was

not extensive. The first eggs were found on thimbleberry on May 11 at Puyallup, on native dewberry on May 12, and on raspberry on May 13.

SNOWY TREE CRICKET (Oecanthus niveus Deg.)

Utah. G. F. Knowlton (April 26): Snowy tree cricket eggs are abundant in raspberry stems in some patches at Brigham, in northern Utah.

CRANBERRY

BLACK-HEADED FIREWORM (Rhopobota naevana Hbn.)

Wisconsin. E. L. Chambers (May 25): The overwintering eggs of the black-headed fireworm were observed beginning to hatch in the vicinity of Wisconsin Rapids on May 19.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Delaware. L. A. Stearns (May 19): First appearance of overwintered adults in vineyards on this date, at Camden.

Mississippi. D. W. Grimes (May 24): Slight injury to grapes at Durant.

Oklahoma. F. A. Fenton (May 24): The grape leafhopper was reported from Ravia and Grove.

Arizona. C. D. Lebert (May 21): Slight injury is becoming apparent on grape plants all over the Salt River Valley.

Idaho. J. R. Douglass (May 22): Complaints of E. comes ziczac Walsh on grapes and Virginia creeper have been received.

Utah. G. F. Knowlton (May 18): Grape leafhoppers were abundant on strawberry and grape foliage at Farmington, in northern Utah. Some damage to the latter host is already evident at Farmington and Logan.

California. C. S. Morley (May 6): Vineyardists in Kern County are doing considerable spraying for control of grape leafhoppers.

GRAPE LEAF FOLDER (Desmia funeralis Hbn.)

California. H. C. Donohoe (May 7): The first adult noted this season was taken in a trap on May 3 at Fresno.

EIGHT-SPOTTED FORESTER (Alypia octomaculata F.)

Missouri. L. Haseman (May 26): Half-grown larvae are causing considerable damage to the terminal growth of unsprayed grapes at Columbia.

Kansas. H. R. Bryson (May 22): The moths of this species are numerous in Manhattan this spring. Several moths have been taken on strawberry blossoms.

PECAN

PECAN CIGAR CASEBEARER (Coleophora caryaefoliella Clem.)

Mississippi. G. L. Bond (May 7): A heavy infestation of this insect on pecan was observed in Jackson County.

PECAN LEAF CASEBEARER (Acrobasis juglandis LeB.)

Texas. F. L. Thomas (April 23): On pecan at Waelder, Gonzales County.

OBSCURE SCALE (Chrysomphalus obscurus Comst.)

Mississippi. N. L. Douglass (May 24): Obscure scale is rather general in the Delta.

CITRUS

GREEN CITRUS APHID (Aphis spiraecola Patch)

Florida. J. R. Watson (May 22): The citrus aphid has partially recovered from the infection of Empusa, which controlled it in April, but the infestations are not severe. The Chinese ladybeetle (Leis sp.) has become established in Polk County. It has spread from Orange County into Osceola and Seminole Counties.

CITRUS THrips (Scirtothrips citri Moulton.)

California. C. S. Morley (May 6): Citrus growers are spraying and dusting for control of citrus thrips, in Kern County.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (May 22): Rust mites have been troublesome to citrus.

SIX-SPOTTED MITE (Tetranychus sexmaculatus Riley)

Florida. H. T. Fernald (May 24): Has appeared lately in rather unusual abundance around Orlando.

T R U C K - C R O P I N S E C T S

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Maryland. C. F. Andrus (May 31): From 16.5 to 60.0 percent of the seedlings in two $\frac{1}{4}$ -acre plots of beans planted on May 4 at Beltsville were destroyed by an unusually concerted attack of seed corn maggots. Counts made on May 20, based on a total of 2,607 plants from small samples, showed an average of 32.5 percent destroyed in one plot and 38 percent in the other. The above percentages of damage represent only seedlings in which the primary leaves were completely destroyed. A large proportion of the remaining plants showed various degrees of injury, as did also the seedlings that had not yet emerged above the soil on the date of observation. It is estimated that not less than 70 percent of the early seedlings in these two plots were infested in some degree. Seed planted 1 week later in the first plot produced seedlings only 10.5 percent of which were seriously damaged by the maggot. Of 869 seedlings counted, only 93 were completely decapitated.

Virginia. H. G. Walker and L. D. Anderson (May 25): Rather abundant early in the spring but has done little damage in the Norfolk district.

Kentucky. W. A. Price (May 24): Seed corn maggots are causing much loss to early planted corn, cucumber, and melon seed.

Missouri. L. Haseman (May 26): During the first half of May numerous complaints were received of scattered heavy infestation of garden peas, melons, cucumbers, beans, and corn.

Nebraska. M. H. Swenk (May 24): Numerous complaints of damage were received from southeastern Nebraska during the latter half of May.

Kansas. H. R. Bryson (May 24): Several reports of this insect have been received. It has been reported attacking planted corn, kafir, melons, and beans. Soil conditions during the early part of the month were not favorable to the germination of seed.

Oklahoma. F. A. Fenton (May 24): The seed corn maggot was reported injuring corn at Okmulgee and McAlester.

Utah. G. F. Knowlton (May 17): Seed corn maggot flies are very abundant in northern Utah in nearly all localities.

Washington. W. W. Baker (May 25): Peas, at Auburn, King County, planted on cabbage and cauliflower ground about a week after the first crops were plowed under, are so severely damaged that the operators think they will have to replant in order to obtain a profitable stand. Estimate of damage by grower, 35 percent.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

Alabama. J. M. Robinson (May 26): The 12-spotted cucumber beetle is moderately abundant in gardens in central and southern Alabama.

Louisiana. H. L. Dozier (May 17): D. 12-punctata and D. balteata Lec. are very abundant on dahlia foliage and bloom on this date, at Opelousas.

Kansas. H. R. Bryson (May 25): The first adults put in their appearance at Manhattan on May 14. Several beetles were taken on that day.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

North Carolina. W. A. Shands (May 25): Light-to-moderate injury to field corn, and moderate-to-severe injury to sweet corn at Oxford, north-central North Carolina. In one garden it was necessary to dust sweet corn three times in May.

STRIPED CUCUMBER BEETLE (Diabrotica vittata F.)

Virginia. H. G. Walker and L. D. Anderson (May 25): The striped cucumber beetle is rather abundant at Norfolk.

Ohio. N. F. Howard (May 27): H. C. Mason reports that the striped cucumber beetle was present on early cucumbers, melons, and squash at South Point.

Louisiana. P. K. Harrison (May 13): The first beetles were observed today, May 13. A squash plant is being severely injured.

GREEN PEACH APHID (Myzus persicae Sulz.)

New Jersey. M. D. Leonard (May 6): One hundred acres of newly set cabbage plants badly infested at Blackwood.

Maryland. E. N. Cory (May 25): Heavy infestation on winter spinach and light infestation on spring spinach in Baltimore County on May 12.

California. J. Wilcox (April 14): Both winged and nymphal forms were common in a young tomato field at San Onofre, San Diego County. A serious infestation was found in Peter's Canyon (Orange County) on April 14. (Det. by G. F. Knowlton.)

SOUTHERN GREEN STINKBUG (Nezara viridula L.)

Mississippi. C. Lyle (May 24): Reported by G. L. Bond as causing severe damage to young corn on May 7 at Moss Point. Many bugs were also found on tomatoes. Specimens taken on turnips, English peas, and Irish potatoes were received from Summit and Brookhaven the last of April.

A LYGAEID (Geocoris bullatus Say)

Nebraska. M. H. Swenk (May 18): The big-eyed false chinch bug was heavily infesting radishes, peas, lettuce, and beets in a garden in Hayes County.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Maryland. G. Myers (May): Adult Colorado potato beetles are occurring in moderate abundance on potato at Avery, 2 miles east of Rockville. An egg mass was observed on May 26.

Virginia. H. G. Walker and L. D. Anderson (May 25): Scarce to abundant in eastern Virginia.

North Carolina. Z. P. Metcalf (May 29): Normally abundant in the eastern half of the State.

Florida. A. H. Madden (May 18): Both larvae and adults abundant at Quincy.

Alabama. O. T. Deen (May): Very little injury to potatoes this season, along the Gulf coast. Adults were noticed in the field on March 31. Only one spraying was necessary for most growers, whereas last season it was necessary to spray or dust at least two or three times.

Mississippi. C. Lyle (May 24): Has been very abundant in nearly all parts of the State this spring, Plant Board inspectors reporting many complaints of injury to potatoes and tomatoes.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Connecticut. N. Turner (May 15): In southern Connecticut beetles attacked potatoes as soon as they sprouted.

Utah. G. F. Knowlton (May 22): Potato flea beetles are seriously damaging young tomato foliage in parts of Carbon County.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

California. J. Wilcox (May 5): Adults quite common, eating leaves of tomatoes in San Juan Capistrano, Orange County.

TOMATO PINWORM (Gnorimoschema lycopersicella Busck)

Florida. J. R. Watson (May 22): Doing severe damage in Manatee and Sarasota Counties. In one field they had infested over 50 percent of the tomatoes; however, the shipping season is over in this section and none of the infested tomatoes are being shipped.

California. J. C. Elmore (May 22): An early tomato field at San Onofre, San Diego County, infested by leaf folders. No fruit injury was observed. Tomato vines in fields of tomatoes in the Vista area generally infested.

BEET ARMYWORM (Lanhygma exigua Hbr.)

California. J. Wilcox (May 5): Doing considerable damage to tomato plants about 1 foot in spread at San Juan Capistrano, also damaging tomato plants in an outdoor seed bed at Riverside on April 30.

ALFALFA LOOPER (Autographa californica Speyer)

California. J. C. Elmore (May 22): Larvae are quite numerous on the leaves of early tomatoes at San Onofre, San Diego County. Fruit injury was not observed. This infestation is heavier than usual.

J. Wilcox (May 4): A large percentage of eggs found on tomato plants at Costa Mesa, Orange County, the last 2 weeks are hatching into the looper Autographa sp., which is expected to do considerable damage. A nearly full-grown larva of A. californica was taken on alfalfa at Artesia on May 4.

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

New Jersey. E. Kostal (May 28): A few adults noted on garden patches in Monmouth County on May 22, which is about the average date in this locality.

Virginia. A. M. Woodside (May 22): The first beetle observed this season was jarred from a peach tree in Albemarle County on May 3. This seems early in comparison with other seasons.

Ohio. N. F. Howard (May 27): Survival in the hibernation cages at Columbus is the heaviest for several years. On May 26 approximately 13 percent of the beetles had emerged in the standard cages at Columbus. In the field, the beetles are not as abundant as in some years, owing to the fact that smaller numbers entered hibernation after the unfavorable, dry season of 1936. H. C. Mason found the first beetle in the field at Columbus on May 23 and the first at South Point on May 4. Eggs were found on May 17 at South Point.

Georgia. T. L. Bissell (May 4): First beetle of season feeding on bean at Griffin, central Georgia. (May 31): Destructive on stringbeans at Experiment. Eggs being laid and a few larvae present.

Alabama. J. M. Robinson (May 25): The Mexican bean beetle continues to be active in central and northern Alabama.

Georgia. T. L. Bissell (May 14): Numerous beetles laying eggs and feeding on leaves of stringbeans in a small garden at Thomasville on May 10. Injury

appreciable. E. borealis F. was associated with the Mexican bean beetles on the beans but did not seem to be feeding.

C. H. Alden (May 22): Found a large number of overwintering beetles on the beans but no eggs and larvae to date at Cornelius.

Colorado. R. L. Wallis (May 21): An average of records of weekly examinations during May of beetles in hibernation cages show that there was a winter mortality of 93.04 percent at Grand Junction.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Ohio. N. F. Howard (May 27): Moderately abundant at South Point but not as injurious as in 1936.

South Carolina. W. C. Nettles (May 21): Quite destructive in the bean-growing sections of the coast, control measures being necessary early in May.

Georgia. T. L. Bissell (May 14): Much damage to beans and cowpeas by adults at Experiment.

Mississippi. C. Lyle (May 24): The bean leaf beetle has been generally abundant over Mississippi this season.

Texas. F. L. Thomas (April 26): The bean leaf beetle is causing injury at Millican, in Brazos County.

CABBAGE

IMPORTED CABBAGE WORM (Ascia rapae L.)

Virginia. H. G. Walker and L. D. Anderson (May 25): Imported cabbage worms are relatively scarce near Norfolk, but white butterflies are rather abundant in many fields of cabbage.

Florida. H. T. Fernald (May 13): Butterflies unusually abundant near Orlando. Most cabbage and cauliflower has been harvested and the butterflies are laying eggs on the rejected plants left in the fields.

DIAMONDBACK MOTH (Plutella maculipennis Curt.)

Utah. G. F. Knowlton (May 17): Adults are abundant throughout northern Utah, particularly on mustards of various kinds. Larvae are webbing white top in many localities, reducing the production of seed in this weed.

Colorado. G. M. List (May 22): The diamondback moth has been very numerous in all the northeastern quarter of Colorado since April 28. The larval population was below normal in this section last fall and indications are that a migration may be responsible for this sudden increase. Larvae are becoming numerous on wild and cultivated Cruciferae.

CABBAGE LOOPER (Autographa brassicae Riley)

New York. R. W. Leiby (May 20): Loopers observed in small numbers in a few fields of newly set cabbage, but they are absent in most fields in Onondaga County.

Virginia. H. G. Walker and L. D. Anderson (May 25): Very scarce at Norfolk.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

New York. R. W. Leiby (May 20): Treatments for control are being generally applied. Eggs being laid in average abundance.

Ohio. N. F. Howard (May 27): The cabbage root maggot damaged a small planting of early cabbage on Ohio State University Farm on May 23, and is reported to be present in the vicinity of Columbus. No cabbage root maggots were observed on early cabbage at South Point on May 17.

CABBAGE APHID (Brevicoryne brassicae L.)

Maryland. E. N. Cory (May 14 and 25): Cabbage aphid attacking cabbage at Brookville.

Virginia. H. G. Walker and L. D. Anderson (May 25): The cabbage aphid has been rather abundant on seed-kale plants this spring, but is very scarce on cabbage at Norfolk.

Ohio. N. F. Howard (May 27): Cabbage aphid was present on cabbage in the Ohio River Valley on May 17, but is not as abundant as the previous week, probably because of heavy rains.

Indiana. J. J. Davis (May 27): Cabbage aphid was reported damaging cabbage at Deputy on May 12.

Kentucky. W. A. Price (May 24): Cabbage aphids have been the source of many inquiries during the past month.

Missouri. L. H. Heseman (May 26): The cabbage louse is being reported frequently as serious on cabbage throughout the State.

Nebraska. M. H. Swenk (May): Complaints of the cabbage aphid on cabbage plants were received from Saline County on May 19 and from Johnson County on May 20.

Kansas. H. R. Bryson (May 27): Cabbage aphids are more numerous than usual this spring in Riley County. Some injury has been done.

A WEEVIL (Ceutorhynchus assimilis Payk.)

Washington. W. W. Baker (May 7): Present in fair numbers on weed mustard at Lower Elwha, Clallam County. A small patch of weed mustard near the eastern limits of Sequim, Clallam County, was heavily infested. This is our first record for the Olympic Peninsula.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

New York. R. W. Leiby (May 20): Present in average numbers and causing some damage over the State.

New Jersey. E. Kostal (May 28): Crioceris asparagi and C. duodecimpunctata L. are exceptionally numerous near Morganville, Monmouth County. Eggs and larvae of C. asparagi have been noted regularly on New Jersey asparagus in New York market.

Maryland. E. N. Cory (May 13): Attacking asparagus in Prince Georges and Montgomery Counties. Generally reported as serious in Kent and Talbot Counties.

Washington. E. W. Jones (May 24): The asparagus beetle is much less abundant this spring than last. On May 24, a few adults, eggs, and full-grown larvae were taken in several fields at Walla Walla. Low winter temperatures (January mean, 14° F.) have probably given some control of this pest.

PEAS

PEA APHID (Illinoia pisi Kltb.)

Delaware. L. A. Stearns (May 20): Moderate infestation just prior to bloom in Nassau, Sussex County, and Dover, Kent County.

Maryland. E. N. Cory (May 26): Heavy infestations in Talbot, Wicomico, Worcester, Dorchester, and Prince Georges Counties. Lighter infestation in Caroline. Record for Eastern Shore: April 27, heavy infestation on alfalfa at Ridgely and scattered infestation on peas; May 4, infestation general on peas, averaging from 5 to 6 per plant on the shore; May 11, generally more numerous, but few noticeable clusters. Only a few fields slightly injured; May 15, had multiplied rapidly since May 11; May 18, considerable clustering, plants showing injury in places. Record for western Maryland: May 21, week's survey did not indicate any signs of outbreak in Harford, Carroll, and Frederick Counties; May 26, outbreak near Gaithersburg in Montgomery County.

G. Myers (May 28): An outbreak of the pea aphid is occurring in large fields of canning peas between Rockville and Norbeck.

Virginia. H. G. Walker (May 25): The pea aphid has been very destructive to peas during the past month in the eastern part of Virginia. However, a fungous disease, predators, and other factors have greatly reduced its numbers and it is becoming rather scarce.

Ohio. N. F. Howard (May 17): The pea aphid is not now very abundant on a planting of peas at South Point but it was abundant last week. Natural control was probably due to heavy rains. Coccinellids becoming numerous and first-generation larvae are pupating. The planting was seriously injured, the tips of the plants being malformed and stunted.

Wisconsin. C. L. Fluke (May 20): Pea aphid is very scarce in Dane County.

Kansas. J. R. Horton (May 21): Aphids moderately numerous, somewhat more so than usual in recent years near Wichita. Very few winged forms yet. Predators and parasites numerous. Damage light.

Texas. S. W. Clark (May 29): I. pisi found on bur clover and sweet clover at Weslaco, Hidalgo County, in the lower Rio Grande Valley.

Utah. G. F. Knowlton (May 17): Becoming increasingly abundant on alfalfa, and winged females are moving to canning peas in northern Utah. Thirteen winged females and 11 nymphs were collected in 50 sweeps of an insect net on peas north of Layton. (May 21): Fourth-generation aphids are now coming on in some pea fields on Mapleton Bench.

California. S. Lockwood (May 25): The pea aphid was very abundant in the Imperial Valley earlier in the season but has largely subsided.

A THrips (Frankliniella ameliae Hood)

Texas. F. L. Thomas (May 24): S. W. Clark reported these thrips attacking English peas in fields of Hidalgo and Cameron Counties in the lower Rio Grande Valley, January 12. Eggs were laid in the pods. The species is rather rare in the United States, although previously reported from Texas, according to J. R. Watson.

SQUASH

SQUASH BUG (Anasa tristis Deg.)

Virginia. H. G. Walker and L. D. Anderson (May 25): Squash bugs are present and laying eggs, but they are not very numerous at Norfolk.

South Carolina. W. C. Nettles (May 21): Squash bug was reported to be destructive in Hampton County on May 19.

Mississippi. D. W. Grimes (May 24): Some injury to squashes at Durant is reported.

Louisiana. C. O. Eddy (May 24): Squash bugs have been abundant for 10 days.

EGGPLANT

EGGPLANT LACEBUG (Gargaphia solanii Heid.)

Mississippi. L. J. Goodgame (May 24): Injury to eggplants at Aberdeen is reported.

ONIONS

A PLANT BUG (Labopidea allii Knight)

Kansas. H. R. Bryson (May 21): Doing considerable damage to spring onions throughout the eastern half of the State. The tops of the onions turn brown and wilt down.

Oklahoma. C. F. Stiles (May 20): A new onion pest has made its appearance throughout the State. This is a sucking insect closely related to the tarnished plant bug. (This note is being placed under L. allii by the Insect Pest Survey as the probable species, awaiting identification.)

ONION THRIPS (Thrips tabaci Lind.)

New York. N. Y. State Coll. Agr. News Letter (May 3): Rather serious injury to greenhouse-grown cucumbers in Rochester observed on April 30.

Virginia. H. G. Walker and L. D. Anderson (May 25): Thrips are rapidly becoming very abundant on cabbage and onions at Norfolk.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Utah. G. F. Knowlton (May 8): Ninety-five percent of the strawberry leaf rollers at North Logan are now adult.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Delaware. L. A. Stearns (April 30): Moderate infestation in early to full-bloom strawberries at Laurel, Sussex County.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

Florida. J. R. Watson (May 22): The pepper weevil was found in three abandoned pepper fields in Manatee County. Scouting of the surrounding counties had negative results. Infestation in Sarasota County cleaned up.

SWEETPOTATO

POTATO APHID (Illinoia solanifolii Ashm.)

Louisiana. H. L. Dozier (April 29): For the past week this aphid has been increasing in extremely abundant numbers on sweetpotato plants in greenhouse germination test plots at Opelousas. (Det. by P. W. Mason.)

TORTOISE BEETLES (Cassidinae)

Mississippi. C. Lyle (May 25): Chelymorpha cassidea F., Jonthonota nigripes Oliv., and Metriona bivittata Say are very numerous on sweetpotatoes at Corinth.

Louisiana. H. L. Dozier (May 17): Sweetpotato vines are being generally attacked by tortoise beetles at Opelousas. Injury to foliage quite noticeable.

SUGAR BEETS

BEET LEAFHOPPER (Eutettix tenellus Bak.)

Idaho. J. R. Douglass (May 24): The spring brood of leafhoppers in south-central Idaho is comparatively large owing to the moderately high spring population of overwintered leafhoppers and an abundance of favorable host plants on which to reproduce. The warm, dry weather of May has been favorable for the early development of the spring brood; therefore the migration into the cultivated areas will begin about June 1 and should reach the peak about June 18. Already there are a few overwintered leafhoppers within the cultivated area but this is a normal occurrence, as a few of the insects remain within the cultivated area each winter.

Utah. G. F. Knowlton (May 17): Beet leafhoppers were rather abundant on sugar beets west of Provo and less abundant at Plain City, in northern Utah.

H. E. Dorst (May 25): Large long-distance migration of beet leafhoppers from southern Utah, southern Nevada, and northern Utah, extended from Richfield to the Idaho State line on the north. Migration of April 23 to May 20 reached the beets while they were in the cotyledon stage and reached the tomato-growing district from Payson to Garland during planting time.

BEAN APHID (Aphis rumicis L.)

California. A. E. Michelbacher (May 21): An aphid believed to be A. rumicis was doing serious injury to a sugar-beet planting near Stockton on May 7. The beets were literally covered with the pest.

HOP FLEA BEETLE (Psylliodes punctata Melsh.)

Utah. G. F. Knowlton (May 22): Hop flea beetles are damaging sugar beets in northern Utah and injury to young seedlings is reported as very severe in Gunnison Valley. Replanting due to this cause is reported in a number of instances.

TOBACCO

TOBACCO HORNWORMS (Protonarce spp.)

North Carolina. J. P. Vinzant (May 25): First eggs observed this year were found on tobacco in the field on May 24 at Oxford.

Florida. A. H. Madden (May 10): P. sexta Johan. eggs and larvae are becoming numerous in a few fields of sun-grown tobacco in Gadsden County.

CORN ROOT WEBWORM (Crambus caliginosellus Clem.)

Tennessee. L. B. Scott (May 25): The so-called tobacco wireworm is present on tobacco in about normal numbers in Montgomery County.

TOBACCO FLEA BEETLE (Epitrix parvula F.)

North Carolina. Z. P. Metcalf (May 29): The tobacco flea beetle is about as abundant in the entire State as it was last year.

South Carolina. W. C. Nettles (May 21): Considerable damage was apparent early in May in the Pee Dee district but diminished about May 20.

Florida. F. S. Chamberlin (June 1): The second brood of tobacco flea beetles has emerged in Gadsden County and appears to be more abundant than usual.

Tennessee. L. B. Scott (May 8): Less numerous than usual in western Tennessee, with very slight damage. (May 25): Present in less than normal numbers in northwestern Tennessee. Has increased slightly since May 20 but damage in tobacco plant beds is negligible.

Kentucky. W. A. Price (May 24): Flea beetles in tobacco beds have been moderately common.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Massachusetts. A. W. Morrill (May 15): Tobacco seedlings in seedbeds attacked in localized areas. Affected plants severely damaged. First severe case noted this season at Southwick, Hampden County.

TOBACCO THIRIPS (Frankliniella fusca Hinds)

Florida. F. S. Chamberlin (May 12): Owing to heavy rains during the first part of May, very few thrips are present in the tobacco fields of this region (Gadsden County). No damage to date.

APHIDS (Aphididae)

Tennessee. L. B. Scott (May 25): Aphid (undetermined) has caused many complaints from growers near Springfield. The damage is not severe but very noticeable in many plant beds. The presence of aphids on tobacco in this section is rather unusual.

GARDEN FLEA HOPPER (Halticus citri Ashm.)

Florida. F. S. Chamberlin (May 17): This insect is much less abundant on tobacco than normal. Damage slight in Gadsden County. (Det. by H. G. Barber.)

C O T T O N I N S E C T S

BOLL WEEVIL (Anthomomus grandis Boh.)

South Carolina. F. F. Bondy and C. F. Rainwater (May 15): Weevils in Florence County are emerging in the fields in apparently larger numbers than for the past 3 years. The average of all fields examined was 145 weevils per 10,000 plants. (May 29): The following table, giving the emergence of boll weevils in the hibernation cages at Florence for the past 6 years, shows that the 1936-37 winter mortality was not as high as during the previous 3 winters.

Date	Boll weevil emergence in--					
	1932	1933	1934	1935	1936	1937
	Number	Number	Number	Number	Number	Number
May 2-15-----:	454	1,537	8	98	0	666
May 16-22-----:	124	397	1	14	2	314
May 23-28-----:	200	329	0	22	0	628
	:	:	:	:	:	:

Georgia. P. M. Gilmer (May 15): At Tifton in southern Georgia slight weevil damage is appearing in isolated spots. Apparently the overwintering brood is the smallest in many years.

Mississippi. C. Lyle (May 22): Examinations were made on 18 farms in 10 counties during the last week and weevils were found in only 1 field.

E. W. Dunnam (May 15-29) No weevils have been reported in Washington County.

Louisiana. R. C. Gaines and assistants (May 22): In Madison Parish the following record of boll weevils taken on nine flight screens is reported, in comparison with previous years.

Date	1937	1936	1935
	Number	Number	Number
May 1-----:	5	0	7
May 8-----:	5	1	6
May 15-----:	6	1	35
May 22-----:	6	1	10
	:	:	:

From present indications, weevils are more numerous in the vicinity of Tallulah than they were a year ago at this time but less numerous than during the last week in May of the 4 preceding years. Apparently there was a higher survival of weevils this spring than following any winter since 1932.

Texas. F. L. Thomas (May 15): The emergence of boll weevils at College Station has exceeded 6 percent and is already greater than the 11-year average. (May 22): Weevils are continuing to emerge from winter quarters and their numbers are increasing in the fields. As many as 455 per acre were found in one field in Dimmit County. (May 29): Weevils are reported in Nueces County and have been found to average 130 per acre in a few fields of Bexar County. The emergence totals more than 9 percent and has been exceeded only three times in 12 years..

R. W. Moreland (May 8-15): On 1,200 cotton plants in Brazos and Burleson Counties in 3 fields of unchopped cotton 11 weevils were found and on 800 plants in 3 fields where the cotton had been chopped 16 weevils were found.

K. P. Ewing (May 8): In Calhoun County indications are that there are not as many boll weevils this year as last, although numbers are higher than normal. (May 15): This week there was a considerable increase over last in the number of weevils found in cotton in the river bottom in Jackson County, which indicates they are still coming out of hibernation. Examination of 5,600 cotton plants in 11 fields showed an average of 1.6 weevils per 100 plants, as compared to 0.3 per 100 found last week. In Calhoun County 5,700 plants in 28 cotton fields were inspected and an average of 0.18 weevil per 100 plants was found, as compared to the previous week (May 8) of 0.15 per 100 plants. (May 22): In the Lavaca River bottom, in Jackson County, in the examination of 2,200 plants in 5 fields the average number of boll weevils per 100 plants was 2.32 this week, as compared to 1.6 last week. All of this increase was in one field where the cotton had grown unusually large and there was a concentration of weevils in this field. The other 4 fields showed about the same infestation as during the previous week. In 1,700 cotton plants in 47 fields in Calhoun County the average boll weevil per 100 plants was 0.106, a reduction from an average of 0.18 per 100 plants the previous week. The decrease was probably due to the fact that more fields in the open prairie were inspected this week. (May 29): In the Lavaca River bottom, in Jackson County, 1,300 cotton squares were inspected in 4 fields; the boll weevil infestation averaged 38 percent punctured squares and there were 2.8 adult weevils per 100 squares. The maximum infestation was 50 percent and the minimum, 25 percent. In Calhoun County no boll weevils were found on 17,300 cotton plants examined for cotton flea hoppers, but this was not a true index of infestation, as the weevils have left the terminal buds and are now on the larger cotton squares.

Florida. H. C. Young, J. T. Roy, and K. H. Smith (May 1): No boll weevils have been found in cotton fields to date. Indications are that emergence will be light throughout the State. (May 15): In Alachua County weevil counts were made in 17 fields and only 9 were infested. The number of weevils ranged from 20 to 170 per 10,000 plants, the average for all fields being 35 per 10,000 plants. (May 22): In Alachua County 24 fields were inspected and weevils were found in 18. The number of weevils ranged from 10 to 275 per 10,000 plants in the infested area, or an average of 47 per 10,000 plants in all fields examined. (May 29): In Alachua

County 16 of the 21 fields examined were infested with weevils. The number of weevils in the infested fields ranged from 13 to 220 per 10,000 plants. The average population of all fields examined was 56 weevils per 10,000 plants.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia. T. L. Bissell (May 27): Adults are seriously damaging young cotton at Fort Valley in central Georgia, by feeding into the stalks and leaf petioles. About 20 percent of the plants in one field, where cowpeas were grown in corn last year, are killed.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Texas. A. J. Chapman (May 1): At Presidio there was a heavy emergence of moths from the hibernation experiments during the week, indicating a heavier survival than last year. (May 15): There has been a reduction in emergence from all the hibernation tests except the one irrigated on April 20. The emergence indicates a higher percentage of survival than last year.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Texas. F. L. Thomas (May 27): The cotton leaf worm was reported from Nueces County today.

K. P. Ewing (May 8): In Calhoun County no leaf worms have been found. Last year the first one was found on May 5.

Correction.--The locality for the cotton leaf worm reported in the Insect Pest Survey Bulletin, June 1936 (vol. 16, p. 97), should have been Port Lavaca, Tex., instead of Port Tobacco.

COTTON FLEA HOPPER (Psallus seriatus Reut.)

South Carolina. F. F. Bondy (May 15): One cotton flea hopper nymph found in Florence County.

Mississippi. A. L. Hammer (May 24): The cotton flea hopper is rather common on cotton at State College.

Louisiana. R. C. Gaines (May 15): In Madison Parish 94 adults and 11 nymphs were found in 300 sweeps on evening primrose. In 500 sweeps near Tendall 36 adults and 2 nymphs were taken. No sweepings were made during the same week last year but the number found this week was greater than that found during the last week of May in 1936.

Texas. F. L. Thomas (May 8): Flea hoppers are more abundant in central Texas than in the more northern counties. (May 29): Control measures have been started in some counties of southern Texas. There are but few fields in the central part where control measures would be justified.

K. P. Ewing (May 8): At Port Lavaca, in Calhoun County, there was a decided increase in the number of flea hoppers found on the screens and also in the cotton fields this week, as compared to last week. (May 15): There was a decrease this week over last in the number of flea hoppers found on the screens and also in the cotton fields. There was also a decrease in the population on horsemint and evening primrose.

COTTON APHIDS (Aphidae)

Georgia. P. M. Gilmer (May 15): In southern Georgia a few aphids were found. Most of these have been parasitized.

Florida. H. C. Young (May 1): At Alachua a few aphids were noted in some fields

South Carolina. F. F. Bondy (May 15-29): In Florence County some fields showed a considerable infestation of leaf aphids.

F. F. Bondy and C. F. Rainwater (May 22): Root aphids are killing young cotton and causing serious damage in some fields.

W. C. Nettles (May 21): Cotton root aphids were first noticed in the coastal section during the first half of May. Considerable damage occurred in some fields.

Texas. K. P. Ewing (May 8): In Calhoun County cotton aphids were found to be numerous in practically all fields but apparently doing no damage. Predators seemed to be increasing. (May 15): Predators very numerous and giving control; aphids considerably decreased in numbers.

THrips (Thysanoptera)

South Carolina. J. G. Watts (May 24): Frankliniella fusca Hinds was becoming abundant on cotton at Florence by May 20.

F. F. Bondy and C. F. Rainwater (May 29): Thrips have done a great deal of damage to cotton in Florence County.

Mississippi. E. W. Dunnam (May 20): In Washington County an average of 2.24 thrips per cotton plant were found when the plants were in the four- and five-leaf stage. Practically all of the thrips were nymphs. Damage is more severe in the older cotton and some buds are blasted, but vegetative branches have not appeared. (May 29): The average seedling infestation of thrips ranges from 2.15 to 14.00 per plant. The lighter infestations are found in small unchopped cotton and the heavier ones in block-chopped cotton. Leaf damage is noticeable in most fields, but side branching has not started.

Louisiana. C. O. Eddy (May 24): F. fusca was abundant on seedling cotton throughout the State during the first two-thirds of May. Much injury resulted.

R. C. Gaines (May 15): At the Tallulah laboratory thrips are reported to be appearing on cotton. Counts made in the latin-square tests showed an average of slightly more than one thrips per plant.

Texas. F. L. Thomas (May 22): In some fields in central Texas 100 percent of the plants are infested. (May 29): Injury to cotton has attracted much attention and is reported as severe in DeWitt, Grimes, Burleson, Brazos, and Madison Counties.

FOREST AND SHADE-TREE INSECTS

PERIODICAL CICADA (Magicicada septendecim tredecim Walsh & Riley)

Indiana. L. F. Steiner (May 26): In certain orchards which suffered a heavy attack 13 years ago newly made exit tunnels are extremely abundant. In one Vincennes orchard adjoining a wooded area many of the trees have more than 10,000 exit tunnels under them. Emergence began about May 25.

Kentucky. W. A. Price (May 20): The first report of the periodical cicada was received from Mayfield, in western Kentucky.

Tennessee. G. M. Bentley (May 28): The periodical cicada has made its appearance at Overton Park at Memphis, Shelby County. It was first observed on May 23, but apparently the forms made their first appearance in this park on May 19. It also appeared in Tipton and Lauderdale Counties.

Mississippi. C. Lyle (May 24): Reports throughout northern Mississippi indicate that Brood XXIII of this insect is now appearing in large numbers. Specimens were received from Grenada on May 17, including some of the variety cassinii Fisher. On May 22 they were reported from all over Tippah County and on the same date were very abundant in Pontotoc, Chickasaw, and Alcorn Counties. G. L. Bond reports hearing them recently in George, Greene, Wayne, and Jackson Counties.

Missouri. W. F. Turner (May 28): In Gardner National Forest, in the northwestern corner of Howell County on oaks; also in Gardner National Forest in the northeastern corner of Douglas County (distinct from colony reported in Howell County; separated by several miles). This colony was heard along the highway for over a mile.

CANKERWORMS ET AL (Geometridae)

Rhode Island. A. E. Stene (May 27): Cankerworms are abundant, largely in Providence County.

Connecticut. P. Garman (May 19): Alsophila pometaria Harr. much less abundant on apple than last year, in New Haven County.

New York. R. D. Glasgow (May 22): The fall cankerworm is defoliating shade trees at Loudonville and is apparently more abundant elsewhere in the Hudson Valley than last year.

E. P. Felt (May 24): Eggs of Ennomos subsignarius Hbn. were received from Newburgh, indicating a probable local abundance. This is occasionally extremely numerous and injurious in the Catskill forests.

Ohio. T. H. Parks (May 24): Two or three species of spanworms were found

on a trip made May 14, recently hatched and devouring leaves of oak, hickory, and elm in farm wood lots of western Ohio. Many of these trees near Dayton probably will be defoliated, as the outbreak seems to be more intense than that of a year ago. The spring cankerworm (Paleacrita vernata Peck.) is injuring apple trees in unsprayed home orchards in the western third of Ohio and is very abundant on many elms in forest and dooryard plantings.

Missouri. L. Haseman (May 26): One of the heaviest outbreaks of cankerworms I have seen in many years is showing up throughout central and northeastern Missouri. The larvae are about half-grown at this time and are stripping some large elm trees in the Clarksville district. At Columbia they are very abundant but not yet seriously stripping trees.

Kansas. H. R. Bryson (May 25): Very little injury has been caused by cankerworms this year. Two or three areas around Manhattan have experienced some injury.

Oklahoma. F. A. Fenton (May 24): Cankerworm injury was reported from Okmulgee.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

Vermont. J. V. Schaffner (May 24): Hatching of the forest tent caterpillars in Bennington County was general on May 3. The majority of the caterpillars were in the third instar on May 22 and the effect of this group feeding was becoming noticeable, particularly on sugar maple.

New York. R. D. Glasgow (May 22): The forest tent caterpillar, abundant again in parts of eastern New York, is reported to have defoliated some pin oak at Chatham.

South Carolina. F. Sherman (May 24): Forest caterpillar locally abundant in Dorchester and Berkeley Counties, in the eastern section.

W. C. Nettles (May 21): The forest tent caterpillar was causing serious forest tree defoliation about May 1 in the lower part of the State.

Minnesota. J. E. Grathwohl (May 11): Hatching of forest tent caterpillar started about May 11. Very abundant.

GYPSY MOTH (Porthearia dispar L.)

Maine. F. H. Lathrop (May 19): Larvae were observed hatching from egg clusters in the experimental orchard at Monmouth, Kennebec County, on May 4. Hatching proceeded very slowly during the next 10 days. On May 16 large numbers of newly hatched larvae were observed on the experimental trees, but little or no feeding had taken place. The insect is unusually abundant this spring. In southern Maine it threatens to do considerable damage in apple orchards located near infested woodland.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Ohio. E. W. Mendenhall (April 28): The white-marked tussock moth nests (cocoons) are abundant on shade trees in parks in Caldwell, Noble County.

BIRCH

BIRCH LEAF MINER (Fenusia pumila Klug)

Connecticut. R. B. Friend (May 21): Adults are very abundant on gray birch and have been ovipositing for about a week.

New York. W. E. Blauvelt (May 24): Adults seen on Betula populifolia in various localities in Westchester, Nassau, and Suffolk Counties from May 10 to 14. Egg laying was well under way by the latter date.

ELM

ELM LEAF MINER (Kaliopsisphinga ulmi Sund.)

New York. W. E. Blauvelt (May 24): Adults were first observed on May 18 and were abundant on May 23 on English elm at Ithaca. Many eggs had been deposited but none had hatched by May 23.

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Massachusetts. J. V. Schaffner (May 24): P. A. Berry reports that the elm leaf beetles were issuing from hibernation in large numbers at Woburn the week beginning May 17.

New York. R. D. Glasgow (May 22): The elm leaf beetle, apparently less abundant in the Hudson Valley since 1934 than during the preceding 3 years, appears to have come through the mild winter in greatly increased numbers. It is already causing notable injury at Catskill and numerous correspondents earlier this spring reported the invasion of houses by hordes of the beetles coming out of hibernation.

California. C. S. Morley (May 6): Spraying for elm leaf beetle in Bakersfield was started the first of this month. The first pests were found feeding on April 28.

APHIDS (Aphidae)

Delaware. L. A. Stearns (May 5): Infestation beginning at Newark.

North Dakota. J. A. Munro (May): Aphids are very abundant on elms at Fargo.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

Ohio. E. W. Mendenhall (May 20): Very abundant on elm trees in central Ohio.

Indiana. J. J. Davis (May 27): Reported abundant at South Bend.

HEMLOCK

HEMLOCK SCALE (Aspidiotus abietis Schr.)

Connecticut. E. P. Felt (May 22): So extremely abundant on a small hemlock at Greenwich that it produced badly yellowed foliage and evidences of serious injury.

LARCH

LARCH CASEBEARER (Coleophora laricella Hbn.)

Connecticut. W. E. Britton (May 21): One twig from Hamden brought to the office. Leaves with distal half mined. Pupae present.

Vermont. H. L. Bailey (May 25): Very abundant at Dorset, Bennington County, southwestern Vermont, and Montpelier, Washington County, central Vermont.

New York. R. D. Glasgow (May 22): At North Elba on May 12 had nearly all left their hibernation stations and migrated to the newly opening buds. Very rarely had more than one needle in a cluster been mined. This introduced insect is slowly destroying the tamarack in northern New York forests. Large numbers of trees have already died as a result of repeated defoliation and very few trees do not show serious injury.

R. E. Horsey (May 1 and 11): Very numerous this year on American, Siberian, European, Japanese, and other larches at Rochester; none immune. First noted on May 1 and still feeding on May 11.

MAPLE

MAPLE BORER (Synanthedon acerni Clem.)

Ohio. E. W. Mendenhall (May 5): Troublesome in both hard and soft maples in plantings in parks and streets.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Alabama. J. M. Robinson (May 26): Active on leaves of maples in Birmingham on May 14.

MAPLE BLADDER GALL (Phyllocoptes quadripes Shim.)

Connecticut. E. P. Felt (May 22): Developing in considerable numbers on unsprayed soft maple trees at North Stamford, although those treated with a dormant spray are practically unaffected.

MESQUITE

A MIRID (Melanotrichus minus Knight (?))

Arizona. T. P. Cassidy (May 6): We have had several complaints recently from cattle people about the foliage on mesquite dying and drying up as though the tree had blight. The people are very much concerned, as they depend largely on the mesquite foliage for feed until the summer rains occur. At Sawyer Ranch a similar situation was reported. The blighted trees were spotted through the mesquite breaks and were very heavily infested with hoppers; found hoppers on all of the mesquite trees swept, even though they did not show signs of blight, but they were not as numerous on the nonblighted trees. (Det. by H. G. Barber.)

AN UNDERWING (Catocalinae)

Arizona. C. D. Lebert (May 21): Larvae (species undetermined) were found by the thousands under the bark of some large mesquite trees in a Phoenix yard. The larvae come out at night, drop from the trees, cover the lawn below, and crawl into the home, where they annoy the occupants. When disturbed, many of the larvae suspend themselves by a silken thread from the trees.

OAK

OAK GALL (Andricus coronus Beut.)

New York. W. E. Blauvelt (May 24): A heavy infestation was noted on a few specimens of pin oak at Rye, Westchester County, on May 10. Most of the galls had already fallen to the ground.

PINE

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

New Jersey. J. V. Schaffner (May 22): Recent observations in the northern and central parts of New Jersey show that the European pine shoot moth is generally distributed throughout this area. In several localities it is apparent that the infestations are on the increase.

New York. W. E. Blauvelt (May 24): Light-to-heavy infestations in red, mugho, and Austrian pines were observed from May 10 to 15 in various localities throughout Westchester, Nassau, and Suffolk Counties. Numerous larvae were collected but no pupae were found.

A SAWFLY (Neodirrion spp.)

Massachusetts. J. V. Schaffner (May 24): The sawfly reported in 1935 and 1936 as seriously injuring red pine in plantations in Middlesex County continues in outbreak form. Hatching was general on May 7 and on at least two plantations the infestation was so heavy that spraying was necessary to prevent serious defoliation.

AN APHID (Cinara sp.)

Virginia. W. J. Schoene (May 24): During the first week in May flights of aphids were observed at several points in the State, especially at Charlottesville, Staunton, and Blacksburg, the insects being so numerous in some localities as to interfere with building operations. We have not definitely determined the insect, but it appears to be Cinara sp.

EASTERN PINE BARK BEETLE (Ips pini Say)

Michigan. E. I. McDaniel (June 2): Specimens of this beetle were collected on a Norway pine plantation near Pontiac, Oakland County. A number of young trees growing on a high, sandy knoll had been attacked and several killed. (Det. by M. W. Blackman.)

SPRUCE

SPRUCE GALL APHID (Chermes abietis L.)

Wisconsin. E. L. Chambers (May 25): A number of requests have been received this spring for identification and control.

New York. W. E. Blauvelt (May 24): Numerous specimens of Norway spruce infested with old galls and overwintered nymphs were received from various localities. The overwintered females began laying eggs at Ithaca on May 8, when buds were just beginning to show green on the more vigorous trees. Many eggs had been laid by May 11 on Long Island, but no hatching had been observed by May 14. Picea canadensis was found to be rather heavily infested at Jamesport on May 13.

A EUCOSMID (Argyroploce abietana Fern.)

New York. W. E. Blauvelt (May 24): Badly infested specimens of blue spruce were received from Ononta on May 10 and from Bombay on May 18. When examined on May 18 most of the individuals were in the pupal stage. Adults started to emerge from this material on May 20. (Identified by W. T. M. Forbes.)

A SCALE (Fiorinia sp.)

New York. E. P. Felt (May 22): A spruce scale, Fiorinia sp., was found in considerable numbers on a spruce at Glen Cove, Long Island.

WILLOW

A FLEA BEETLE (Altica prasina Lec.)

Washington. M. J. Forsell (May 12): Attacking native willows in King County. The pest is not new in the area. Skeletonizing the leaves so severely in places that small branches are killed.

INSECTS AFFECTING GREENHOUSE
AND ORNAMENTAL PLANTS
CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Maryland. E. N. Cory (May 17): A nursery at Pittsville infested through a shipment from South Carolina. Nurserymen are now working to clean up the infestation.

A SCARABAEID (Plectris aliena Chapin)

South Carolina. Charleston News and Courier (May 28): The Charleston beetle (P. aliena) put in its appearance on several lawns in Charleston this week after an absence of a year or two.

ARBORVITAE

ARBORVITAE LEAF MINER (Argyresthia thuiella Pack.)

Connecticut. E. P. Felt (May 22): Arborvitae leaf miner is locally abundant here and there, considerable amount of injury being found at Westport.

AZALEA

AZALEA SCALE (Eriococcus azaleae Comst.)

Louisiana. H. L. Dozier (May 12): Heavy infestation located on azaleas in commercial nursery at Lafayette. On this date newly hatched crawlers were very abundant and bushes were blackened from sooty mold.

A SCALE (Pseudaonidia paeoniae Ckll.)

Louisiana. H. L. Dozier (May 17): Generally distributed over southwestern Louisiana on azalea and camellia, often causing serious damage.

BOXWOOD

BOXWOOD LEAF MINER (Monarthronalpus buxi Laboulb.)

New York. W. E. Blauvelt (May 24): Light-to-very-heavy infestations in boxwood were observed in various localities in Westchester, Nassau, Suffolk, and Rockland Counties from May 10 to 15. All miners were in pupal stage. Apparently no adults had emerged by May 15 and only a small percentage of the pupae showed any darkening of the appendages preparatory to emergence.

CAMELLIA

CAMELLIA SCALE (Lepidosaphes camelliae Hoke)

South Carolina. W. C. Nettles (May 21): Present on practically every camellia in South Carolina.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew.)

Wisconsin. E. L. Chambers (May 25): Serious injury to chrysanthemums observed in several greenhouses at various points in the State.

GLADIOLUS

GLADIOIUS THRIPS (Taeniothrips simplex Morison)

Florida. J. R. Watson (May 22): The gladiolus thrips is very abundant in Manatee County. The season is about over and the bulbs are being rapidly dug.

BULB MITES (Phizoglyphus hyacinthi Bd.)

Ohio. E. W. Mendenhall (May 20): Bulb mites were injurious in gladiolus bulbs in a nursery at Springfield.

HOLLY

HOLLY LEAF MINER (Phytomyza ilicicola Loew)

Connecticut. E. P. Felt (May 22): Holly leaf miner occurs here and there locally. A rather serious infestation was found at Greenwich.

New York. W. E. Blauvelt (May 24): Heavy infestations in Ilex opaca were observed at White Plains, Westchester County, on May 10, and at several places on Long Island on May 11 to 14. All the larvae had pupated but no adults had emerged. Adults started to emerge on May 18 and considerable numbers had emerged by May 23.

JUNIPER

A LEAF MINER (Argyresthia alternatella Kearf.)

New York. W. E. Blauvelt (May 24): Severe injury to a fair-sized planting of juniper was observed on Long Island on May 15. Over 90 percent of the insects were in the pupal stage, in gray silken cocoons attached to the leaves and bark. Adults began to emerge on May 19 and were identified by W. T. M. Forbes. Specimens were also received from Patchogue, from which adults began to emerge on May 20.

JUNIPER WEBWORM (Dichomeris marginellus F.)

New York. W. E. Blauvelt (May 24): Moderate-to-heavy infestations and injury on juniper in Westchester County and Long Island from May 9 to 15. Most of the larvae were nearly full grown but no pupae could be found.

LILAC

LILAC BORER (Podosesia syringae Harr.)

Wisconsin. C. L. Fluke (May 20): This insect found doing considerable damage to lilacs in Brown County.

MUGHO PINE

PINE LEAF MINER (Paralechia pinifoliella Chamb.)

Connecticut. E. P. Felt (May 22): The pine leaf miner was found in abundance on mugho pine at Westport.

ROSE

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Maryland. J. A. Hyslop (May 26): Seriously affecting the blossoms of roses and peonies, but apparently not as numerous as last year. Many flowers are damaged but many are also free from injury.

NODULAR TWIG GALL (Rhodites nodulosus Bequaert)

Nebraska. M. H. Swenk (May 20): A rose twig that had gall on it formed by R. nebulosus was sent in from Hitchcock County on May 20.

A. ROSE APHID (Myzaphis rosarum Klth.)

Ohio. E. W. Mendenhall (May 20): Rose aphids are quite numerous on rose bushes in gardens of private homes in central Ohio.

FLOWER THIRIPS (Frankliniella tritici Fitch)

Mississippi. C. Lyle (May 24): Specimens of roses infested with thrips were received from Philadelphia, Magnolia, Millard, Lexie, and Starkville during the first half of the month.

SNOWBALL

BEAN APHID (Aphis rumicis L.)

Utah. G. F. Knowlton (May 18): A. rumicis is extremely abundant and damaging snowball bushes at Smithfield and is found on occasional bushes at Logan.

YEW

BLACK VINE WEEVIL (Brachyrhinus sulcatus F.)

Rhode Island. A. E. Stene (May 27): A severe infestation of black vine weevil on Taxus at Cranston.

New York. W. E. Blauvelt (May 24): Light-to-heavy infestations were found on Taxus cuspidata in several localities on Long Island during the week beginning May 9. These and past observations indicate that the pest is present in at least a considerable percentage of nursery and ornamental plantings on Long Island and in Westchester County, and that it frequently causes serious damage where it is not controlled.

YUCCA

A MIRID (Halticotoma valida Reut.)

Maryland. C. A. Weigel (May 8): Observed the leaves of yucca at College Park teeming with apparently newly hatched nymphs. Foliage showed characteristic stippling. The mirids quickly run for the other side of foliage when disturbed.

I N S E C T S A T T A C K I N G M A N A N D
D O M E S T I C A N I M A L S

MAN

MOSQUITOES (*Culicinae*)

United States. G. H. Bradley (May): The first adults of *Aedes sollicitans* Walk. were observed near Milford, Del., on May 10 and at Girdletree, Md., on May 3. *A. cantator* Coq. was observed several days prior to May 3. Salt-marsh mosquitoes had not been troublesome in the coastal towns up to May 24.

B. V. Travis (May 20): Mosquitoes have been more annoying to man in the vicinity of Newton, Ga., and Tallahassee, Fla., than in many years, according to the natives. During the last 2 weeks it has been hot and dry and the mosquito population has decreased greatly.

Florida. F. C. Bishopp (May 20): A correspondent at Minneola writes, "We are being eaten alive by mosquitoes. The insects are so numerous that they sound like a swarm of bees surrounding the house." A correspondent at Miami writes, "So far this season we have had very few salt-marsh mosquitoes (*A. sollicitans* and *A. taeniorhynchus* Wied.), although conditions have been favorable several times for flights from the areas south of our ditched sections.

Illinois. F. C. Bishopp (May 25): A correspondent at East Saint Louis reported that mosquitoes were so abundant that one could hardly get out of doors.

SAND FLIES (*Culicoides* spp.)

New Jersey. G. H. Bradley (May 8): These insects were abundant and annoying to man on the salt marshes near Atlantic City.

Delaware. G. H. Bradley (May 21): Sand flies or punkies were somewhat annoying to men working on the salt marshes near Fenimore Landing.

Mississippi. K. L. Cockerham (May 8): Sand flies at Biloxi have been an unusual nuisance throughout the entire month of April.

AMERICAN DOG TICK (*Dermacentor variabilis* Sny)

New York. F. C. Bishopp (May 25): Murray Maxwell reports from Roslyn, Long Island, that this tick appeared about April 15 on the west end of the island, whereas on the east end it had not yet appeared on May 7. The writer states: "I feel that this year it may be close to an epidemic. There are many more than ever before and they appeared earlier."

Maryland. F. C. Bishopp (May 24): Reports from parts of Maryland adjacent to the District of Columbia indicate that wood ticks have been very numerous this month. The number of cases of spotted fever reported unofficially to the State Public Health Service appears to be about the same as last year.

Illinois. C. L. Metcalf (May 25): The wood tick appears to be unusually abundant in Illinois this spring.

Iowa. F. C. Bishopp (May 6): The first appearance this spring of this tick was on May 6, according to G. S. Cantonwine, who says that a careful check of dogs, cattle, and people made periodically throughout the spring in this area where ticks are abundant showed no ticks to be present prior to this date.

BLACK WIDOW SPIDER (Latrodectes mactans F.)

Alabama. J. M. Robinson (May 26): The black widow spider was reported causing concern at Falkville on May 12.

Nebraska. M. H. Swenk (May 2): Reports were received from Antelope and Kearney Counties on May 2 and 9, respectively.

Colorado. G. M. List (May 22): A black widow spider was taken in the College gymnasium early in May at Fort Collins.

Utah. G. F. Knowlton (May 20): Several inquiries concerning black widow spider have been received lately.

SCREWWORM (Cochliomyia americana C. & P.)

United States. W. E. Dove (May 31): The low point for cases occurred during the last week of December as compared to the third week of February of the preceding year. Localized outbreaks occurring in the line of advance in Jefferson County, Fla., and Camden County, Ga., were brought under control. At Hinesville, Ga., the first case of the season occurred on May 25, which was 25 days later than the first case last year, and 40 days later than the first case of 1935. For the 4-week period ended May 21, there were 2,575 cases representing about one-half million animals in Florida. In Georgia 60 cases were reported in the southern counties. As yet, cases have not been found in western Florida, South Carolina, Alabama, Mississippi, Louisiana, or in eastern Texas. In California no screwworms were present in the Imperial Valley during the winter and most of the animals are now in the higher elevations without infestations. Screwworms are now present in small numbers in these sections, in three counties of the southeastern corner of New Mexico, and a few cases are occurring in Pima and Cochise Counties, Ariz. Throughout this area there is a low incidence of cases. Much of the shearing was completed in advance of the spread of screwworms and most of the shear cuts were treated with pine tar oil. For the 4-week period ended May 21 there were 7,424 cases reported from Texas, representing more than three million animals of the infested area. The heavy shipments of feeder stock to Oklahoma and Kansas are about completed and stockmen made efforts to ship only "clean" animals into these areas.

Texas. W. C. Maxwell (May 5): Several cases in Andrews County, a few cases in Martin County, and two severe cases in Glasscock County. Most of these cases started the latter part of April.

D. C. Parman (May): As a result of a survey from April 16 to May 4, the presence of C. americana was established in southwestern Texas extending as far west as Reeves and Presidio Counties, as far north as Brown and Runnels Counties, and as far east as Burleson and Austin Counties.

Arizona. D. C. Parman (May 12): The first adult taken in Arizona this year was captured at Pozo Blanco, Maricopa County, on May 12.

HORN FLY (Haematobia irritans L.)

Louisiana. C. L. Stracener (May): Horn flies are abundant on cattle.

Missouri. L. Haseman (May 26): Horn fly has already appeared in annoying numbers on cattle in central Missouri.

GULF COAST TICK (Amblyomma maculatum Koch)

Florida. A. L. Brody (May 25): Only 1 male of this tick was found on 38 head of cattle examined in connection with certain burning experiments at Penney Farms, Clay County. This is the first adult observed on livestock in that area this spring. No immature stages of the tick were found on eight birds of several different species examined on April 13 and 14.

Mississippi. G. L. Bond (May 24): This tick is reported very abundant in the counties of George, Greene, and Wayne.

Texas. W. E. Dove (May 8): W. J. Spicer collected specimens at Laward, in Jackson County, on May 6.

SHEEP

SHEEP BOTFLY (Oestrus ovis L.)

Georgia. E. R. McGovran (May 7): On May 7, an adult was taken at Valdosta, this being the first specimen taken this year; however, I believe the flies have been active in the field for at least 2 weeks, as the sheep in our pastures have acted as though they were being annoyed by nose botflies.

H O U S E H O L D A N D S T O R E D - P R O D U C T S I N S E C T S

TERMITES (Reticulitermes spp.)

New York. R. D. Glasgow (May 22): R. flavipes was found in Loudonville causing serious damage to the woodwork of a residence property.

Indiana. J. J. Davis (May 27): Termites are the subject of many inquiries, as usual at this season.

Illinois. W. P. Flint (May 24): Termites are swarming generally in the southern part of Illinois.

Nebraska. M. H. Swenk (May): A Hall County correspondent reported on May 19 that her house was heavily infested with termites. On May 1⁴ from Otoe County came injured wood and specimens of R. flavipes Kol.

Colorado. R. G. Richmond (May 26): Considerable damage being done by the black-legged termite (R. tibialis Banks) in the baseboards and sills of a house at Denver. (Det. by T. E. Snyder.)

Texas. F. L. Thomas (May): Termites reported May 6 and 8 from Rochester, in Haskell County, and from Texarkana, in northeastern Texas. Reports of injury are seldom received from as far northwest as Haskell County.

Washington. E. J. Newcomer (March and April): More inquiries have been received regarding R. hesperus Banks from Yakima Valley than ever before.

RAISIN MOTH (Ephestia figulilella Greg.)

California. H. C. Donohoe (May 8): The first adult, out of doors, was noted on May 4 at an open raisin storage in Fresno County, San Joaquin Valley. As in previous years, the first moths appeared at about the same date as the first ripe, fallen mulberries were observed. At this period mulberries are the only known field food.

TOBACCO MOTH (Ephestia elutella Hbn.)

California. H. G. Donohoe (May 8): Two larvae from stored raisins at Fresno, San Joaquin Valley, were reared and identified as E. elutella. Although adults are common about raisin storages each spring, these are the first larvae that have been collected from raisins and definitely identified.



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CIGARETTE BEETLE (Lasioderma serricorne F.)

North Carolina. W. D. Reed (May 5): In 25 suction light traps operating in warehouse of flue-cured cigarette tobaccos at Durham for the week ending April 30, a total of 12 cigarette beetles was caught. In 10 traps operating for the same period in warehouses of imported cigarette tobaccos, a total of 7 beetles was caught. This marks the first emergence of the spring brood in 1937.

HOUSE CENTIPEDE (Scutigera forceps Raf.)

Iowa. C. J. Drake (May 19): Specimens of the house centipede have been received from Bremer, Kossuth, Story, Linn, and Clayton Counties.

PEA WEEVIL (Bruchus pisorum L.)

Idaho. C. Wakeland (May 25): A very slight infestation of the pea weevil was observed in pea fields in the early blossom stage in Payette County on May 18. The heaviest population encountered was 4 adults in 150 sweeps of a 15-inch net. In adjacent, unblossomed fields no weevils were captured by sweeping.

BLACK CARPENTER ANT (Camponotus herculeanus pennsylvanicus Deg.)

New Jersey. J. C. Silver (June 3): Sills and porch supports have been severely damaged in several localities in northeastern New Jersey by an ant, probably this species.

Wisconsin. E. L. Chambers (May 25): Several complaints have been received of injury from the carpenter ant to woodwork.